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OUR readers have been duly presented with accounts of the former Transactions of this learned Society, at the time of their appearance; and we doubt not that they will participate with us in the pleasure which we feel, on receiving every additional proof of the progress of the arts and the cultivation of science. We hope that the political Union, which has been formed between our two islands, will prove favourable to the literary as well as to all the other interests of our Sister Country; and that in both the seats of learning and of government will co-operate with mutual amity and reciprocal advantage.

Of the VIth volume of these records, we gave a copious analysis in M. R. vol. xxix. N. S. p. 15, 388; and we now proceed to pay equal attention to the present, the papers in which are arranged in the order hitherto observed.

G. 2

SCIENCE.

On the Precession of the Equinoxes. By the Rev. Matthew Young, D. D. M. R. I. A.——It is known to mathematicians that Newton, calculating the effects of the sun's force in producing the precession of the equinoxes, fell into an error, and made it less by one half than the truth. Since his time, the problem has been rigorously solved; first by D'Alembert, to whom the theory of gravitation is indebted for one of its strongest confirmations. That great mathematician determined analytically the motions of the earth's axis, on the hypothesis that the strata of the terrestrial spheroid had any form and density whatever; and he not only found his results agreeable to observation, but he ascertained the true dimensions of the small ellipse described by the pole of the earth.

The principal object of the present memoir is to discover distinctly in what the fallacy of Newton's reasoning consists;

and to this end, the learned author examines the three lemmas which Newton prefixes to his 39th Proposition, and then the several corrections proposed to be made by Simpson, Frisi, Milner, and Landen, in order to obtain an accurate result. This examination is performed with much perspicuity; and Dr. Young properly acquiesces in the correction made by Landen. This acute and excellent mathematician, in the thirteenth of his Mathematical Memoirs, vol. ii. p. 50, has shewn that the principal mistake, in Newton's process, arose from not considering the centrifugal force of the particles of the revolving ring of moons acting in opposition to the solar force, while such a ring has a tendency to revolve about a momentary axis, in consequence of the compound motion which it must necessarily have on becoming rigid, agreeably to the supposition.

General Demonstrations of the Theorems for the Sines and Cosines of Multiple circular Arcs, and also of the Theorem for expressing the Powers of Sines and Cosines by the Sines and Cosines of Multiple Arcs: to which is added a Theorem, by help whereof the same Method may be applied to demonstrate the Properties of the Multiple Hyperbolic Areas. By the Rev. John Brinkley, A. M. Andrews' Professor of Astronomy, and M. R. I. A.——These theorems are familiar to mathematicians: but the object of the present author is to give more natural and correct demonstrations of them than have hitherto appeared. He deduces these demonstrations from the circle by the help of the doctrine of combinations; and the method is this:—let $S.$, $C.$, be symbols for a sine and cosine, A, A^{I}, A^{II}, A^{III}, &c. arcs:—then

$$S.(A+A^{I}) = S(A)\times C(A^{I}) + S(A^{I})\times C(A)$$

and $$C.(A+A^{I}) = C(A)\times C(A^{I}) - S(A)\times S(A^{I})$$

$$\therefore S.\big((A+A^{I})+A^{II}\big) = S.(A+A^{I}).C(A^{II}) + S(A^{II})\times C.(A+A^{I})$$

$$= \begin{cases} S(A)\times C(A^{I})\times C(A^{II}) + S(A^{I})\times C(A)\times C(A^{II}) \\ +S(A^{II})\times C(A)\times C(A^{I}) - S(A)\times S(A^{I})\times S(A^{II}) \end{cases}$$

In like manner, the $S.((A+A^{I}+A^{II})+A^{III})$ may be found; and by observing the way in which the successive values of $S.(A+A^{I})$, $S.(A+A^{I}+A^{II})$, &c. are formed, it will appear that, if A, A^{I}, A^{II}, &c. be all equal,

$$S.(A+A+A-) \text{ or } S.(nA) = nC^{n-1}(A)\times S(A) - \frac{n.n-1.n-2}{1.2.3.} \times C^{n-3}(A)\times S^{3}(A) + \text{ &c.}$$

and that $$C.(A+A+A-) = C^{n}(A) - \frac{n.\overline{n-1}}{1.2} \text{ &c.}$$

In the next place, Mr. Brinkley demonstrates what is likewise a known theorem, that

$S.(nA)$

$$S.(nA) = 2 \times C^{n-1}(A) - (n-2).\ 2 \times C^{n-3}(A) + \&c.$$

now this theorem is deduced thus; substitute for n successively the values, 2, 3, &c. and eliminate $C(A)$; then it may be conjectured that the law for $S.(nA)$ is as it is given; and in order to complete the demonstration, the conjecture is proved to be right. In these proofs, as the French express it, *il y a quelque chose à desirer;* the first part, viz. $S.(nA) = nC^{n-1}(A) \times S(A) - \frac{n.n-1)\ n-2}{1.2.3}$ &c. we think, wants perspicuity; and the latter part, viz. $S.(nA) = 2 \times C^{n-1}(A) - (n-2)\ 2\ C^{n-3}(A)$ &c. is certainly indirect. The methods at which Mr. B. glances in the beginning of his memoir, as being either improper, (as employing imaginary quantities,) or unsatisfactory, (as founded on an analogy supposed to exist between the circle and the hyperbola,) or imperfect, (as obtained by induction,) are probably those given by Euler in his *Introductio in Analysin Infinitorum*, by De Moivre in his *Miscellanea Analytica*, and by Thomas Simpson in his Miscellaneous Tracts; and these methods are beyond a doubt unsatisfactory. We shall be excused, perhaps, if we deviate a little from the strict line of our duty, to shew how the formula for the sine and cosine of the multiple arc may be deduced by the method of finite differences, or of increments.

By the known theorems of trigonometry,

$S.(nA) = S.((n-1)A + A) = S.((n-1)A) + C.(A) + S(A) \times C.((n-1)A)$

and $S.((n-2)A) = S.((n-1)A - A) = S.((n-1)A) \times C(A) - S(A) \times C.((n-1)A)$

$\therefore S.(nA) = 2\,S.(n-1A) \times C.(A) - S((n-2)A)$

Let $S.(nA) = {}^{x}n$, $\cos A = y$

then ${}_{x}n = 2y\,{}_{x}n-1 - {}_{x}n-2$

Let $n=2 \therefore {}_{x}2 = 2yx$,

$n=3 \therefore {}_{x}3 = 2y\,{}_{x}2 - x, = 4y^2x - x$,

$n=4 \therefore {}_{x}4 = 2y\,{}_{x}3 - {}_{x}2 = 8y^3x - 4yx$,

&c. &c. &c.

Assume, therefore, for ${}_{x}n$ this form,

$x, (A_n\, y^{n-1} + B_n\, y^{n-3} + C_n\, y^{n-5} + \&c.)$

and since ${}_{x}n = 2y\,{}_{x}n-1 - {}_{x}n-2$

$$\therefore x_2(A_n y^{n-1} + B_n y^{n-3} + \&c.) = \begin{cases} 2x_1(A_{n-1}y^{n-1} + B_{n-1}y^{n-3} + \&c.) \\ -x_1(A_{n-2}y^{n-3} + B_{n-2}y^{n-5} + \&c.) \end{cases}$$

hence, comparing terms affected with the same powers of y,

$$A_n = 2A_{n-1}$$
$$B_n = 2B_{n-1} - A_{n-2}$$
$$C_n = 2C_{n-1} - B_{n-2} \quad \&c.$$

Now these coefficients do not exist together; the least index of B is 3, of C 4, &c. since the equations, by which these coefficients are to be determined, do not commence before these values of $n=3$, $n=4$, &c.

Hence, integrating $A_n = 2^n Q$: but when $n=1$, $A_1=1$

$$\therefore Q = \tfrac{1}{2} \therefore A_n = 2^{n-1} \therefore A_{n-2} = 2^{n-3}$$

again $B_n = 2B_{n-1} - 2^{n-3}$; and integrating

$$B_n = 2^{n-3}(n-2) \quad \&c.$$

$$\text{hence } x_n = S.(nA) = \sin(A) \begin{cases} 2^{n-1} \times y^{n-1} - \dfrac{n-2}{1} 2^{n-3} y^{n-3} \\ + \dfrac{(n-3)(n-4)}{1.2} y^{n-5} \quad \&c. \end{cases}$$

The original of this method was given by M. De La Place in the Turin Memoirs, in a paper intitled, *Recherches sur le Calcul Intégral, aux différences infinitement petites et aux différences finies.*

The theorems for the sine and cosine of the multiple arc are followed by theorems for the powers of the sines and cosines; and Mr. Brinkley's demonstration of them is partly like that given by Thomas Simpson, p. 77. *Miscellaneous Tracts*, but is here rendered somewhat more general by considering how the quantities are involved, and thence determining the coefficients from the doctrine of combinations.

Mr. Brinkley's and Simpson's methods begin the same: thus,

$$2(\text{cos. A})^2 = \text{cos.}(A+A) + \text{cos.}(A-A)$$
$$= \text{cos. } 2A + 1$$
$$\therefore 2^2(\text{cos. } A)^3 = 2\,\text{cos. } 2A\,\text{cos. } A + 2\,\text{cos. } A$$
$$= \text{cos. } 3A + \text{cos. } A + 2\,\text{cos. } A$$
$$= \text{cos. } 3A + 3\,\text{cos. } A$$

Hence, if we suppose $2^{n-1}(\text{cos. } A)^n = \text{cos. } nA + n\,\text{cos.}(n-2)A$ &c. then $2^n(\text{cos. } A)^{n+1}$ will $=\text{cos.}(n+1)A + (n+1)\,\text{cos. } \overline{n-1}A$ &c. or if the law be true for n, it is true for $(n+1)$: but, taking n any finite number by actual involution, we find the law true, and therefore it is true for all numbers superior to n. This is very nearly the method of Simpson: but, strictly speaking, it

is no proof. If, from observation on the law that the coefficients *appear* to follow in particular instances, the law be inferred to be general, then the proof (if there be any meaning in words) is inductive; and if we conjecture the law for the index n, and prove it true for the superior indices $(n+1)$, $(n+2)$, &c. the proof is still inductive, since the conjecture must be formed by a process which is really a process of induction.

The several varieties of the formula consequent on the different values assigned to n are given by Mr. B. with the greatest exactness and perspicuity; and the memoir, on the whole, reflects great credit on its author.

Remarks on the Velocities with which Fluids issue from Apertures in the Vessels which contain them. By the Rev. Matthew Young, D. D. &c.——Newton (vol. 2.) was the first who considered this subject: but it has since been investigated theoretically and experimentally by several mathematicians, *Bernouilli*, *D'Alembert*, *Du Buat*, and *Venturi*; and within these few years, Professor Vince of Cambridge has printed, in the Transactions of the Royal Society, the results of experiments made by him in a public capacity, relative to the time of emptying vessels. The remarks and reasonings of Dr. Young are worthy of notice;—especially his explanation of the diminution of the time of emptying vessels, which ensues on inserting narrow tubes in them.

A new Method of resolving Cubic Equations. By Thomas Meredith, A. B. Trinity College, Dublin.

Let an equation be $x^3+px^2+qx+r=0$

The reciprocal equation is $rx^3+qx^2+px+1=0$

If $x=rx$, it becomes $x^3+qx^2+prx+r^2=0$;

consequently, $x^3+qx^2+prx+M^3=M^3-r^2$.

Let the root be $a+a$; then $q=3a$, $pr=3a^2$ $M^3=a^3=\frac{q^3}{2}$:

consequently, in order that the equation may be a perfect cube, q^2 must $=3pr$. Hence, in any equation, $x^3+px^2+qx+r=0$: for x write $z+e$: investigate the value of e that renders $q^2=3pr$: then transform the equation into the reciprocal equation that has 1 for its first term; and make, by adding or subtracting a certain quantity to each side of the equation, the last term on the left hand side $=\frac{q^3}{27}$; then extract the cube root on each side, and $x+\frac{q}{3}=\sqrt[3]{\frac{q^3}{27}-r^2}$.

This method of solving cubic equations has no advantage over that of Cardan, in being more perspicuous, more direct,

or more general. Like Cardan's method, it also has its irreducible case.

On the Force of Testimony in establishing Facts contrary to Analogy. By the Rev. Matthew Young, D.D. &c.——"*La Philosophie* (says D'Alembert) *prend, pour ainsi dire, la teinture des Esprits ou elle se trouve. Chez un metaphysicien, elle est ordinairement toute systematique; chez un géomètre, elle est souvent toute de calcul.*" The precipitancy of mathematicians in applying their science to all subjects occasioned this remark. D'Alembert was the ablest mathematician of his time: but he was also more; he was a philosopher and a metaphysician: he never suffered his common sense to be led astray by a fondness for his favourite study: he never mistook the mere result of an algebraical calculation for a physical truth; and he considered analysis as an instrument and key by which the secrets of nature might be opened, not as a casket in which all knowlege was mysteriously enveloped. In the *doctrine of chances*, he thought that mathematicians had been too precipitate; that is, that they had begun to calculate before they had sufficiently examined their principles. These principles are to be obtained from experience and observation: the mathematician, therefore, must frame an hypothesis as nearly coincident as is possible with the judgments formed from experience; and he may obtain a test to try the truth of his hypothesis, by comparing the consequences deduced from that hypothesis, in particular cases, with the result of experience. Now, according to the doctrine of chances established by De Moivre, Bernouilli, &c. there is a fraction which expresses the probability of throwing, with a die of six faces, an ace a thousand times successively; or, in other words, the fact of an ace being thrown a thousand times successively is mathematically possible. We have no hesitation, however, in saying that such a fact is *physically impossible;* or that all our notions derived from observation are against such an uniformity in the order of events; and if the hypothesis be defective in this instance, how can we be certain that it is accurate in others, or that it truly assigns the probability of throwing an ace 100 times, or 50 times, or 10 times, &c. successively? Again, in the doctrine of chances, the value of *expectation* is measured by the product of the sum and the probability of gaining it: hence, suppose that *A* and *B* play on these conditions, viz. that *A* is to give *B* a crown, if *B* with a counter marked on its two faces *a*, *b*, throws *a* the first time; two crowns, if he throws it the second; four crowns if he throws it the third time, and so on:—now it is required to assign what is the value of *B*'s expectation, or what sum he ought previously

previously to give to *A*, in order that each may be on equal terms. According to the rules in the doctrine of chances, the sum is

$\frac{1}{2} \times 1 + \frac{1}{4} \times 2 + \frac{1}{8} \times 4$, &c.

$= \frac{1}{2} \times (1 + 1 + 1 + 1)$ &c. $= \infty$, or an infinite sum; which is manifestly absurd, since it is physically certain that *B* must lose.

Again; suppose that *A*, being worth 1000l., has an opportunity offered of gaining 1000l. more, if an event should occur, of which the probability is $\frac{1}{2}$: according to the rules in the doctrine of chances, the value of the chance of this 1000l. is $\frac{1000}{2}$ or 500l.: yet we know that no reasonable man in *A*'s condition would give 400l. nor 300l. for it.

Again; in a lottery worth 400,000l. with 100,000 tickets, the value of each ticket or chance is only 4l.; yet a person does not hesitate to give for it 8 or 9l.; and having bought a ticket, perhaps, he would not sell it for 10l. or 20l. or 50l.

The above considerations are sufficient to shew that the doctrine of chances rests not on such sure ground as it is generally thought to do, and that its results are to be admitted as true only in a certain sense. Much error has crept in from the indeterminate meaning of words: the term *expectation* ought especially to be restricted: the product of the sum to be obtained, and the chance of obtaining it, are not to be held as the measure of an individual's real expectation, nor of the motive which determines his conduct. It is ridiculous to make a person feel, fear, and hope by algebra. If we wish for precision, we must understand by *expectation* the sum which the contingency expressed by this term will raise in lottery offices, or insurance offices; in short, what will be given for it by those persons who trade in contingencies, and derive from *risks* a *certain* profit. In this sense, the rules of the doctrine of chances properly assign the value of expectation; and in the same manner, from examining the tables of mortality, it is said that an individual *A*, 36 years old, will live so many years: this may be quite false, as applied to that individual from particular circumstances belonging to his diet, his residence, constitution, &c.: but an insurer is justified in allowing him the number of years, which the tables afford for the duration of his life, because he considers him as belonging to a class in which there is a compensation of inequalities which it is impossible separately to appreciate,

These prefatory remarks are easily to be applied to the paper before us; the author of which appears to have read much concerning the subject: but he is frequently inaccurate from using

words of a vague signification; and he corrects Halley and Waring where he is not justified in in so doing.

To consider his reasonings more particularly, he says, p. 81, that 'quantities which are finite must have some finite determinate ratio to each other:'—is it hence to be understood that a finite determinate ratio is that which can be expressed accurately by numbers? if so, the assertion is not generally true; for it depends on actual computation whether the ratio shall be determinate or not; and computation frequently shews that there are quantities which are not to each other as number to number.

In p. 84, the author observes: 'From what has been said, it follows that the probability that a witness tells truth, in a given instance, will be expressed by a fraction whose numerator is the number of chances for his telling truth, and the denominator the sum of the number of chances for his telling truth, and for his telling falsehood together.' Here we tread on uncertain ground: 'tells truth' is a vague expression; our judgment whether the witness may be believed or not depends, perhaps, more on the nature of the fact related than on his previous character.

Shortly afterward, Dr. Young says:

'These principles likewise, as Dr. Waring observes, may be applied to the investigation of the probability of the truth of the decision of any number of voters, and many other cases; the probability of each voter voting truly being supposed given. But, as he also observes, it is impossible to determine the knowledge, integrity, and various influences which actuate each person, and consequently to determine the probability of their voting truly.'

Here Dr. Waring is in our opinion quite right. If precise *measures* of the principles on which calculation is to be founded are obtained, then we must determine whether or not the problem can be solved, by the actual state and perfection of analytical science: but the great difficulty is in obtaining just values of the principles.

We have already remarked on what is quoted in p. 87. from De Moivre, concerning Expectation. For personal individual expectation, there is no measure in all algebra.

'But the expectation, (says Dr. Y.) in the same circumstances of an event, will be different according to the constitution of the expectant: for, according to his antecedent experience, knowledge, prejudices, and passions, the arguments for or against the probability of the event will appear more or less numerous, more or less cogent; so that in given circumstances of an expected event, or of a proposed argument, the apparent probability will very much depend on the constitution of the individual, which therefore must be considered as a principal element in the computation.'

This

This reasoning appears to us to militate against the author's previous and subsequent arguments: but it is sufficient to convince us that, in such cases, we can judge most truly without the aid of analytic knowlege.

'If the chances for the truth and falsehood of the report of each of any concurrent witnesses be equal, no number whatever of such witnesses can render an event probable by their testimony. Because the number of chances of their coincidence in falsehood encreases in the same proportion with the number of chances for their telling truth. Let their number $= n$, since the probability that each witness tells truth is $= \frac{1}{2}$, the measure of the probability of the concurrent witnesses will be $= \frac{n}{2n} = \frac{1}{2}$.'

Let us try this reasoning by a very simple test:—twenty witnesses, of characters half truth and half falsehood, but unconnected with each other, agree in telling a person that, of two prizefighters *A* and *B*, *A* has been the conqueror: then, if this person does not believe more firmly that *A* has really beaten, than he would if only one of these witnesses had related the fact, he deserves pity for the deplorable durance in which the spells of algebra detain him.

As we think that Dr. Young's method of estimating the grounds for the belief of a fact are erroneous, so we are of opinion also that his criticism on Halley's and Waring's methods is fallacious. He appears to be confused in his conception of 'probability in support of a fact.' Waring and Halley mean, by this expression, those arguments which afford to an individual a ground of rational belief that a certain fact has happened as related. Let us extract a passage in which the author says that Waring is erroneous:

'Here I cannot avoid observing, that Dr. Waring's method of determining the resulting probability, where different arguments are contradictory, is erroneous. Let P, says he, be $=$ the probability resulting from the arguments in support of the fact, and $Q =$ the probability resulting from all the arguments against the fact; then the probability of all the arguments for the fact will be $P - Q$, if P be greater than Q; or against it $= Q - P$, if Q be greater than P. See Principles of Human Knowledge, § 10. Now, according to these principles, if two witnesses of equal veracity should contradict each other, the difference between the probabilities for and against the fact would be $= o$, that is, the fact would be impossible; which evidently cannot be a true inference.'

Here it is clear, as we have said, that Dr. Young mistakes the true meaning of *probability*.— If witnesses of equal veracity contradict each other, then it follows not that the fact has not happened, but that we have no ground for belief respecting it, and our assent is only suspended. The witness *A* says

says that, of the two prizefighters, *M* and *N*, *M* is the conqueror; witness *B* affirms that *N* is the conqueror; then the probability that *M* has beaten is equal to the probability that *N* has beaten, and *vice versâ*. We have *no grounds* for forming a rational belief.

We repeat that this subject appears to us very liable to uncertainty, from ambiguous terms and from false assumptions. In mathematics, it is said, we have certainty and truth; and men have been precipitate in translating a question into algebraic language, not considering that mathematical truth means nothing more than the coincidence of a conclusion with the premises, shewn by intermediate propositions; and that therefore a mathematical truth cannot be assumed as a physical truth, except the premises or principles are warranted by experience and observation. We have already said in what cases the doctrine of chances is useful;—in calculating the values of annuities, reversions, &c. If applied to games of chance, the principles seem to want revision; because what is *metaphysically* and *mathematically* possible is not of necessity *physically* possible. If applied to testimony, the doctrine of chances does not lead to much practical usefulness, on account of the extreme difficulty of appreciating principles which are so various, numerous, and mutable.—When there is so much to exercise ingenuity, and to excite rational curiosity, why should we grasp at things above our reach; or capriciously deviate from the plain road of science, in a fanciful search for *difficiles nugæ*?

On the Number of the Primitive Colorific Rays in Solar Light. By the Rev. Matthew Young, D.D. &c.——In this memoir, Dr. Young considers a question which has been frequently agitated; viz. Are there three primitive colours, or seven primitive colours? He inclines to the opinion that there are only three. The following extract contains, perhaps, the most satisfactory part of his argument to shew the reasonableness of his opinion:

'Moreover, if these three colours, red, yellow, and blue, be the primitive colours, they cannot themselves be generated; and accordingly we find that yellow cannot be generated by the mixture of the adjacent prismatic colours, orange and green; and the reason of this is evident, because orange is compounded of red and yellow; and green is compounded of yellow and blue; but red and blue compose purple; which added to the yellow will generate a new compound colour, viz. a sickly green, differing manifestly from yellow, the colour which ought to result according to the analogy of the other primitive colours, in which the extremes, by their mixture, generate that which is intermediate. In the same manner, blue cannot be generated by the mixture of green and indigo, because green is composed of yellow and

and blue, and indigo of blue and violet; therefore the resulting colour is composed of blue, yellow, and violet; but yellow and violet do not compose blue, therefore neither will blue, yellow and violet compose a blue colour. Now if orange and green be primitive colours, in the same manner as red, yellow, and blue, we can assign no reason why blue should not be generated by the mixture of the adjacent colours, as well as green and orange. But it is a received principle, that an hypothesis should solve all the phænomena; of the two hypotheses therefore, namely, that there are seven primitive colours, differently refrangible; or that there are but three, some of which, of each species, are equally refrangible; the latter alone solves all the phænomena of the solar spectrum, and therefore is to be preferred.'

Observations on the Theory of Electric Attraction and Repulsion. By the Rev. George Miller, D.D. M.R.I.A.——The principle here proposed to solve the phænomena of electric attraction and repulsion is *saturation*. A new term, however, does not remove difficulties; and this new term of *saturation* appears to us to designate only what we formerly knew under different expressions.

A general Demonstration of the Property of the Circle discovered by Mr. Cotes, deduced from the Circle only. By the Rev. J. Brinkley.——In 1716, Cotes, according to a letter to one of his friends, discovered that property of the circle which is still called by his name. In the same year, this great man was prematurely snatched away; and it was only after much investigation that the editor of his works (Dr. Robert Smith) was able to find the *Theorema pulcherrimum* * of his deceased friend. The theorem was without demonstration: but this deficiency was supplied by Bernouilli, by De Moivre, and by Maclaurin: to whose demonstrations the author of the present paper objects, since they are derived from properties belonging to the equilateral hyperbola, or are obtained by the aid of imaginary expressions. The method of Mr. Brinkley is briefly as follows:

Let the circumference of a circle be divided into n equal parts OO^1, O^1, O^{11}, &c. and let P be a point in the radius, C the center, $PC=x$, & a, a^1, a^{11}, &c. cos. of o, OO^1, O^1, O^{11}, &c.

then $PO^2 \times PO^{12}$, &c. $=((x^2+1)-2ax)\,(x^2+1-2a^1x)$, &c.

$$=(x^2+1)^n - \left.\begin{matrix} a \\ a^1 \\ a^{11} \end{matrix}\right\} 2x.(x^2+1)^{n-1} + \left.\begin{matrix} aa \\ aa^{11} \\ \&c. \end{matrix}\right\} 2^2x^n.(x^2+1)^{n-2} \quad \&c.$$

" * *Quæ quanquam primo intuitu, Sibyllæ foliis obscuriora videbantur, quod nullo ordine nec verbo erant explicata; multiplices tamen conjectandi occasiones præbendo, spem fortiter conceptam non fefellerunt. Quippe cum ea sæpius evolverem aliamque ex alia re lucrarer, revocari tandem ab interitu Theorema pulcherrimum.*"

now,

now, cosine of n times an Arc, whose cosine is c,

is $2^{n-1}c^n - n.2^{n-3}.c^{n-2} +$, &c. put this quantity $= 1$; but 1 is cosine of o, p, $2p$, 1, &c. (p = periphery of circle); hence a, a', &c. are the different values of c, or are cosines $\frac{o}{n}$, $\frac{p}{n}$, $\frac{2p}{n}$, &c.; or, a, a', &c. are roots of $c^n - \frac{nc^{n-2}}{2^2} +$, &c,

hence $a + a' +$, &c. $= o$

$$aa' + aa'' +, \text{ &c.} = \frac{-n}{2^2}, \text{ &c. &c.}$$

Substitute these values in the form representing the product of PO^2, PO^{12}, &c.; and collecting the terms affected by the same powers of x, the product will appear to be represented by

$$x^{2n} - 2x^n + 1$$

the coefficients of the other terms vanishing; which the author shews will happen, by the aid of a lemma.

On the hypothesis that the cosine of n times an arc, whose cosine is c, is represented by $2^{n-1}\ c^n - 2^{n-3}.\ n\ c^{n-3}$, &c. this proof is perspicuous and direct. In his former paper, Mr. Brinkley demonstrates that the cosine (n arc) is duly represented by the above formula: but we have already mentioned that this demonstration is not to be pronounced *strict*, since the law of the coefficients is first *conjectured*; which circumstance, we think, makes the demonstration an inductive one. Granting, however, the formula for the cosine (n arc), the present demonstration of Cotes's property is very ingenious, and is highly creditable to its learned author.

So far
R. Wood.

Additional Observations on the Proportion of Real Acid in the three Antient known Mineral Acids, and on the Ingredients in various Neutral Salts and other Compounds. By Richard Kirwan, Esq. LL. D. &c.——Those who understand the nature of the science of chemistry know that, if the real quantities of the constituent substances of neutral and other compounds can be found, considerable powers will be attained: for such knowlege will enable us to calculate, in many instances, the force of chemical attractions; and hence also various chemical processes in the arts are carried on with certainty, exactness, and œconomy. In this fundamental part of the science, Mr. Kirwan has been a zealous, and indeed a successful, labourer, for more than twenty years; and the observations now before us are the latest fruits of his well-directed industry. The occasion of the present paper is explained in the following lines by the respectable author:

'The

'The fundamental experiments on which the proportion of real acid in the three mineral acids antiently known, and also the proportion of ingredients in many neutral salts, were determined, I have already set forth in a paper to be found in the IVth Vol. of the Transactions of this Academy *. In that paper I have inserted tables of the quantity of standard acid existing in 100 parts of each of the acid liquors, of given specific gravities, and also in each of the neutral salts therein mentioned; the mode of expressing the quantity of acid I had then adopted I since discovered to be very inconvenient, as in some of these neutral salts an acid still stronger than the assumed standard was found to exist. But I have there also noticed that the strongest vitriolic acid now known, existed in *vitriolated tartarin*, the strongest nitrous acid in *nitrated soda*, and the strongest muriatic acid in *muriated tartarin*; acids of such strength I have therefore denominated *real*, as either containing no water, or containing only as much as is necessary to their essential composition, as far as this is at present known. The method of transforming the expression *standard* into that of *real*, I have there also given, and by it have formed the table I here present; this latter expression I therefore now employ in every case instead of that of *standard*, together with the substitution of a more commodious expression of the strength of acids: The design of this paper is also to exhibit an illustration or amendment of several of the determinations contained in my last, which being for the most part single, required confirmation by shewing their agreement with the experiments of several of the most eminent chymists made since the publication of mine, that is since the year 1791, with a few made nearly at the same time. In my former paper I compared my results with those of Bergman and Wenzel, they being almost the only persons who had made this subject the principal object of their enquiry, and had pursued it to a considerable extent; in each particular instance I have traced the reason of the difference of the results from my own when it was such as to deserve notice, and I shall not here repeat what I have there said; but I cannot avoid again mentioning one general source of error attending the mode of investigation adopted by both and yet noticed by neither, namely, the loss that many neutral salts undergo during evaporation; a loss whose discovery is of considerable importance, not only to the present inquiry, but also to the conduct of several manufactures, particularly to that of saltpetre, and hence noticed by Mr. Lavoisier, 15 An. Chy. 254.'

It is worthy of notice, that Mr. Kirwan here also gives an account of the proportion of *ingredients* in compounds not before noticed, which have been determined by himself and others. His new and first table of the quantity of real vitriolic, nitrous, and muriatic acid of different densities, at the temperature of 60°, cannot be abridged; nor do his observations on this table, and the solution of the problems to *find the*

* See M. Rev. N. S. vol. xiii. p. 386.

quantity

quantity of real acid, and *to find the specific gravity* in 100 parts of acid liquor, admit of being abstracted. The other problems, viz. to find *the quantity of water*, *the quantity of real acid in mixed acid liquors*, *the specific gravity of acids in neutral salts*, and *the quantity of basis in double salts*, are equally incapable of being abridged: but it will be proper to give the *titles* of the other tables, although we can neither exhibit them nor comment on them. Tab. II. is intitled, *Quantity of Real Acid taken up by mere Alkalies and Earths.* III. *Of the Quantity, Alkalies and Earths taken up by* 100 *Parts of Real Vitriolic, Nitrous, Muriatic, and Carbonic Acids saturated.* IV. *Quantity of Neutral Salts afforded by* 100 *Parts of the above-mentioned Acids, when saturated with the above named bases.* V. *Quantity of Neutral Salts afforded by* 100 *Parts of different Bases, when combined with the Vitriolic, Nitrous, Marine, and Carbonic Acids.* VI. *Of the Proportion of Ingredients in certain Saline Compounds.*

On each of these tables, an important collection of experiments has been made for the scientific and the practical chemist; which are detailed in this long Memoir, occupying 140 pages.

from 12. Pears.

Essay on Human Liberty. By Richard Kirwan, Esq. &c. ——This short paper supports the opinion of liberty against Priestley and other necessarians. When words are properly defined, the question is not a very difficult one.

Synoptical View of the State of the Weather at Dublin in the Year 1798. By Richard Kirwan, Esq. &c.

An Abstract of Observations of the Weather in the Year 1798, *made by Henry Edgeworth, Esq. at Edgeworthstown in the County of Longford in Ireland.*

These tables shew some differences in the results; arising, no doubt, from the observations having been made at distinct places. By Mr. K.'s table, it appears that *Hail* fell on two days in the month of August, though the mean height of the thermometer during that month was 58, 72 (Mr. Edgeworth says 61); and that there were 28 days of rain. (Mr. E. says only 9).

G. 2.

A Method of expressing, when possible, the Value of one variable Quantity in integral Powers of another and constant Quantities, having given Equations expressing the Relation of these variable Quantities: In which is contained the general Doctrine of Reversion of Series, of approximating to the Roots of Equations, and of the Solution of Fluxional Equations by Series. By the Rev. J. Brinkley.——In the year 1715, Brook Taylor published his direct and inverse method of Increments; in which work is contained a theorem of great use in analytics: viz. Let $y =$ any function of x; then if x be increased by x, y becomes

$y +$

$y+\left(\frac{\dot{y}}{\dot{x}}\right)\dot{x}+\frac{1}{1.2}\dot{x}^2\left(\frac{\ddot{y}}{\dot{x}^2}\right)+$, &c. or if x be increased by h, y becomes $y+\left(\frac{\dot{y}}{\dot{x}}\right)h+\frac{1}{1.2}h^2\left(\frac{\ddot{y}}{\dot{x}^2}\right)+$, &c. On this formula, the theory of series principally depends. The demonstation of this theorem was given by its learned author by means of Newton's theorem; since, according to the law of this latter, he found the successive values of the variable quantities to increase by continual addition. More accurate demonstrations have been exhibited since Taylor's time; by Euler, in his *Institutiones Calculi Differentialis*, (page 333, 334, &c.), and by La Grange in the Berlin Memoir, 1772. The latter is most accurate: that of the former differs very little from Mr. Brinkley's mode; and we were therefore surprized to find, in a note to the present paper, a complaint against the inaccuracy of the methods by which Taylor's theorem had been demonstrated. From that theorem, it is clear that a method may be deduced, of expressing the value of one quantity in a series ascending by the powers of the other; thus, if $y=fx$, and $y, y^{\prime}, y^{\prime\prime}$, &c. be the values of y, $\frac{\dot{y}}{\dot{x}^2}$, $\frac{\ddot{y}}{\dot{x}^3}$, &c. when $x=o$, it may be proved that $y=fx=y+x.\ y^{\prime}+\frac{x^2}{1.2}, y^{\prime\prime}$, &c. but the author of the present memoir observes, that this developement of fx in cases at all complex is attended with the greatest difficulty, or rather trouble, which must be undergone in order to derive the successive values, $y^{\prime\prime\prime}, y^{\prime\prime\prime\prime}$, &c. A principal object of his memoir, therefore, is to alleviate this trouble, by exhibiting theorems for taking fluxions of different orders *per saltum*; that is, without finding the fluxions of the inferior orders.

Mr. Brinkley shews the utility of his method, by applying it to several examples. He deduces, by its means, the law for the coefficients of a multinomial raised to any power,—the series ascending by the powers of the arc for the logarithmic secant,—the series ascending by the powers of the excentricity for the excentric anomaly, the mean anomaly being given,—and the series for the sine of n times an arc in terms of the sine of the simple arc. This latter example is, as its author justly observes, a conspicuous instance of the advantage of his method; since, by an easy process, the series* $nx-\frac{n^2-1}{2.3}ax^2$

* The author truly remarks that this series has been very imperfectly deduced by several authors: Euler, *Analysis Infinitorum*, p. 199,

+, &c. invented by Newton, is deduced, and its general law established.

We have not the least hesitation in acknowleging the excellence of Professor Brinkley's method, considered relatively to compendium and commodiousness: but the demonstration of his principal proposition is not what we desire a mathematical demonstration to be: as it now stands, we think that it is somewhat deficient in perspicuity and accuracy.

Our readers will remark that, in this article, the mathematical papers of Mr. B. have been particularly examined: the plain inference is that we consider them as deserving notice; and if we have made several critical remarks, let it be remembered that works of ability alone are proper objects of serious criticism. In the preceding volumes of the Dublin Transactions, we find no communications from this author; and there may now, therefore, be no impropriety in congratulating the Academy on the acquisition of so valuable a member as Mr. B. is likely to become.

Account of the Weather at Londonderry in 1799. By William Patterson, M. D. &c.

Synoptical View of the State of the Weather at Dublin in 1799. By Richard Kirwan, Esq. &c.

The class of SCIENCE is, as usual, succeeded by that of

POLITE LITERATURE,

in which we here find only one paper, viz. *Some Observations upon the Greek Accents.* By Arthur Browne, Esq. Senior Fellow of Trinity College, Dublin.

The Greek accents have, since the revival of letters, been a subject of as warm controversy as any in which polemics have engaged. The principal argument urged in their favour is, that they serve to distinguish certain words composed of the same alphabetic elements, but differing in meaning; which meaning is determined by such or such an accent being placed on this or that syllable: but perhaps this discrimination may be readily made from the context, without the aid of accents; as in Latin we discriminate *malum*, an *apple*, from *malum*, an *evil*; or *dico*, I *say*, from *dico*, I *dedicate*; or, as in English, the noun *súbject* from the verb *subjéct*; or *let*, to *permit*, from *let*, to *hinder*. Similar instances might be brought from other languages, both European and Asiatic.

A Grecian ship having been driven into the Bay of Dingle, and her crew being detained a considerable time in Ireland, Mr.

199, deduces (if deduction it can be called) from the scale of relation subsisting between sin. 3 arc, sin. 5 arc, &c.

Browne

Browne took the opportunity of frequently conversing with the master of the vessel and the other seamen, concerning the *Greek accents;* and the result was, 'that the practice of the *modern* Greeks is, to make *accent* the *cause* of *quantity;* and to *govern* and *control quantity*.—They make syllables long, on which the accent falls, and allow the acute accent to change the real quantity.'—This appears to us so exceedingly strange, that we were at first inclined to imagine that Mr. B. must have, in some respect, misunderstood his Greek mariners: but, as he adduces several examples of their manner of reading Greek, we cannot well doubt that his representation is accurate. They pronounced ανθρωπος *anthrŏpos*, αργυτερος *argutōrox*, καλημερα *kalĕmēra*, and επιτηδες *epitĕdēs*. This is certainly putting *quantity* under the government of *accent*, with a vengeance: but will the authority of a modern Greek seaman be sufficient to establish this control? As well might we seek the genuine pronunciation of the Latin from an Italian mariner of Leghorn, as that of the antient Greek from a mariner of Patrass.—Yet it was the pronunciation of these Greek mariners, that led Mr. B. to the conclusion, 'that the peculiarity of the English, by which we always prolong the sound of that syllable on which the *acute* accent falls, is true, and has been true of every nation upon earth!' Mr. B. seems not to be aware that the marking of our emphatic or long syllables with an acute accent was merely accidental and arbitrary, and borrowed from the modern Romans; who chose, in their liturgical books, to direct the ignorant clergy to the true quantity of Latin words, by placing an acute accent on some one long syllable, which served to regulate the rest: but it is evident that any other arbitrary mark (a *grave* accent for example, or a *circumflex*,) would have equally answered the same purpose, and would in reality have been more proper than the acute accent of the Greeks. Our English lexicographers, finding Latin words thus accented, satisfied themselves with borrowing the idea, and placed the same acute accent on the predominant syllables of our words. The French judged better: they put the *acute* accent where it should be, on the *short* and *sharp* syllables of their words; and the *grave* or circumflex on longer syllables. This, in our opinion, was precisely the case with the Greek system of accentuation: for Dr. Horsley has very justly observed that it is a grievous and vulgar mistake, to imagine that they always placed the *acute* on a long syllable; on the contrary, we believe that it was never placed on an absolutely long syllable, but always on a comparatively short one: for an *acute* or *sharp* sound is, by nature, either *absolutely* or *comparatively* short. We say *absolutely* or *comparatively;* for

Dionysius Halicarn. most justly remarks that there are *short*, *shorter*, and *shortest* syllables; as well as *long*, *longer*, and *longest* syllables; and, indeed, it is impossible to give to three, or even two, short syllables together, the same exact quantity in pronouncing them. For instance; whether we read *ārmă vĭrūmqŭe cānŏ*, as the line is commonly read; or *ārmă vĭrūmqŭe cănō*, as it ought to be read; still one of the short syllables, in both dactyls, will be somewhat longer than the other. We are of opinion that every line, whether Greek or Latin, read according to the quantity, and *uncontroled* by any accent, is more harmonious to the tuneful ear, than when pronounced in any other manner. Even the line of Horace quoted by Mr. Browne,

"*O fortunati mercatores, gravis annis,*"

is greatly improved, and not rendered at all unharmonious, by reading

"*O fŏrtūnātī mĕrcātōrēs, grăvĭs ānnīs :*"

but if it be read as it usually is, it is a heavy prosaic line indeed. We shall endeavour to make this remark clearer, from three lines of the same author, in another measure:

"*Mæcenas, atavis edite regibus :*
O et præsidium et dulce decus meum!
Sunt quos curriculo pulverem Olympicum—"

The first and third of these lines are read rightly, in our schools, because they can hardly be read otherwise: but the second is murdered by reading *dulce dēcus mēum*. The mispronunciation, indeed, is not observed, because the words are only dissyllables: but try it in the first line, and read *rĕgībus;* or in the third *ŏlympīcum;* and the effect will be sufficiently apparent.

Mr. B. thinks that, although the French accent differently from other nations, yet their versification may serve to illustrate his system. 'The reason (says he) why heroic French measure seems so intolerable to us, is that we attempt to read it by quantity. It then comes out exactly like our twelve syllable verse,—and the famous line of Corneille,

"*Rome, l'objet unique de mon ressentiment:*"

dances on the ear exactly like

"Ye belles and ye flirts, and ye pert little things."

How the French line dances on Mr. B.'s ear, we cannot say: but on ours it dances very differently: not because we *read it not by quantity*, but because we *do* read it by the strictest rules of quantity.

On the whole, then, whatever opinion may be adopted concerning the utility or inutility of the Greek accents, we must enter

enter our serious protest against their being allowed to *control quantity:* the proper observance of which is the only sure criterion, with us, of reading and pronouncing the Greek and Latin languages.

At the end of this paper, we have a *fac simile* of a modern Greek letter, written by one of the sailors of the above mentioned ship, with an English version,—to which we refer the curious reader.

from 16. Ged. see pages 1, 12, 14, 16.

ART. II. *The History of Helvetia*, containing the Rise and Progress of the federative Republics, to the Middle of the Fifteenth Century. By Francis Hare Naylor, Esq. 8vo. 2 Vols. 16s. Boards. Mawman. 1801.

As the public have very recently been furnished with an elaborate and satisfactory *History of the Helvetic Confederacy*, from the pen of Mr. Planta, they probably did not expect that another work of the same nature would so soon have been offered to them. It has happened in this case, however, as no doubt it frequently must happen in human affairs, that similar designs have been entertained by different persons at the same time. The reasons which have induced Mr. Naylor to print his history, notwithstanding the prior appearance of Mr. Planta's volumes, are thus stated in his preface:

'The greater part of this publication was ready for the press, before I was apprized of Mr. Planta's intention of treating the same subject. Nor is this extraordinary, since it was written during my residence in Italy. But no sooner did I see his HELVETIC CONFEDERACY advertised, than I laid down my pen, determined to wait for the appearance of that work, before I finally decided upon the destiny of my own. Finding, however, that Mr. Planta's view of things differed materially from mine, and that we frequenntly considered the same object in an opposite light, I saw no reason to abandon my plan. How far I may have acted with prudence, it remains with the public to determine.'

A comparison seems thus to be unavoidably excited, which perhaps it would have been more fortunate for Mr. N. if he could have avoided. In the tribute which we paid to Mr. Planta's work *, our judgment has been ratified by that of the public; who have agreed with us in considering it as a valuable acquisition to our literature, not to be passed over by any political or philosophical reader of history. We are sorry that we cannot place the volumes before us in the same class, and assign to them equal praise: but they will be acceptable

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* See Rev. vol. xxxii. p. 161, and 405.

to general readers, to whom they will afford amusement and instruction, and who may peruse them without imbibing errors, or being tainted by any pernicious bias. Sound principles of practical and moderate liberty warm the author's breast, and animate his page; he steers clear of those extremes in politics and religion, which disgrace the present age; and he appears to be equally the advocate of religion, the friend of sound philosophy, and the enemy of bigotry and sophistry. If we are constrained to state, on the other hand, that his matter has not been worked up into method, nor his composition into pure style, and that his volumes are sanctioned by no references to the sources whence he has drawn his information, we mention these defects reluctantly; and we must at the same time give it as our opinion that his inferiority on the score of authorship arises less from inability, than from his not having bestowed the requisite labour on his task.

The first part of the work is rather a history of Europe in general, than of Helvetia in particular, and might with advantage have been very much curtailed.—Of the horrors prevalent during the 7th and 18th centuries, the reader may judge from the extract here subjoined:

'Perhaps no stronger argument can be adduced of the inefficacy of all civil institutions for the preservation of peace, in a rude and barbarous age, than the various regulations and provisions which so frequently occur in the Salic and Ripuarian codes, for the termination of private quarrels. In more polished nations, the law announces itself in an authoritative tone. Among the early Germans, it rather persuaded, and advised, than commanded. Hence, in cases of homicide, it was more the object of the judge to pacify the relations of the deceased, than to punish the criminal, to prevent the fatal consequences of family feuds, than to revenge the injury which had been committed against society. The following anecdote is related by Gregory of Tours. A young man of Tournai, indignant at the ill-treatment which his sister had received, fell upon her husband, with the assistance of a select party of friends, and murdered him with many of his attendants. The affray however, was of so desperate a nature, that the youth, with several of his companions, were [was] killed. The spirit of revenge might now be supposed to have been amply satiated. This was, however, very far from being the case. The honor of the deceased required a still further effusion of blood. The relations and dependants armed on both sides. Not a night passed, but the citizens of Tournai were alarmed with the shrieks of murder, and the clash of swords. Not a morning dawned, but they were shocked with the horrid spectacle of some friend, or relative, borne lifeless to the grave. Fredegunde, who to the disgrace of humanity, and of the female character, at that time reigned over a part of France, left nothing unattempted to appease their resentment. But finding every effort ineffectual, she embraced a reso-

lution, which, while it displays the ferocity of her own disposition, evinces the weakness of the civil arm. Having invited the principal adherents of either faction to a splendid entertainment, under the specious pretence of promoting a reconciliation, she plied them with wine, till they were incapable of all resistance, and then caused them to be assassinated in cold blood.'

The following is the author's account of the prerogatives belonging to the head of the empire:

'In the course of the succeeding pages, we shall have occasion to refer so frequently to the imperial authority, that it may not be improper to examine into it's nature and extent. Such an enquiry will enable us to form a juster opinion of the conduct of the House of Austria, in their memorable struggle with the Swiss.—Under the Saxon line, there is little doubt that the head of the empire was considered not only as the legislator, but as the chief magistrate of Germany. Wherever he came, all authorities ceased, or at least acted in subordinate capacities. His tribunal was paramount to every other, and comprehended persons of all ranks and descriptions. Examples are not wanting to shew, that even counts and dukes have been degraded for malversation. The ancient law books are filled with the decisions of the emperors in disputes between the different princes of Germany. Yet still the emperor does not appear to have acted entirely with an independant, and uncontrolable sway, but usually to have recurred to the advice of persons of the same condition, and generally of the same province with the delinquent. This was done in conformity to an ancient edict, which enacts, that *every one shall be tried by his peers, or equals.* But as it was impossible for the head of the empire to preside in different tribunals at the same time, or to transport himself to the extremities of Germany, with the promptitude which the decision of processes so frequently required, the office of *Count Palatine* was instituted. The business of this magistrate was to superintend the administration of justice in the various provinces. To him an appeal lay from the ordinary tribunals, in causes which were not of sufficient importance to be carried before the emperor in person. By him too was the *imperial ban* published, and by him were the finances administered. These officers were first established in Bavaria, Saxony, Suabia, and upon the Rhine.'

The spirit which pervades Mr. Naylor's accounts of the wonderful events of the Helvetic Revolution is to be highly applauded; and the views which accompany them appear to us extremely just. As, however, in our Review of Mr. Planta's performance, we made ample extracts relating to these points, we must now refer those readers to both the original works, who wish for more minute information.

We fully concur with the present author in the subsequent observations, which we find near the commencement of his second volume:

'Few propositions seem to us more capable of demonstration, than *that man is by nature inclined to submission, and that it requires a more than common degree of misconduct, on the part of his governors, to make him resist.* Whether this proceeds from habitual indolence—from the dread and uncertainty of a revolutionary change—or from a kind of innate reverence for all those dazzling insignia with which supreme power is usually accompanied—is a problem which we shall leave to the philosopher to resolve. The observation comes within the province of history, and is authenticated by her documents in every age.'

Mr. N.'s reflections on the Helvetic union are highly creditable to him, and will reward the perusal of the best informed reader. We extract a passage as a specimen:

'The cantons of Uri, Schweitz, and Unterwalden, may very justly be regarded as the point where all the rays of the confederacy united, as in one common centre. The other five cantons were more immediately connected with these; and through these, with each other. The object both of Berne and Zuric was evidently *aggrandisement*—that of the forest cantons *security*. One principle however was common to them all: they all equally struggled for the preservation of their liberties. Thus was the house of Austria their natural and hereditary foe; the point to which their attention was unremittingly directed; for without the support of that powerful family, the whole swarm of petty tyrants which espoused the cause of aristocracy, were objects rather of scorn than of terror. An alliance founded upon such a coincidence of interests, was subject to none of those little jealousies, which are usually the bane of all political confederacies. Besides, the Helvetic union was rather the effect of chance, and of a fortunate combination of fortuitous circumstances, than the result of political speculation, or of deep laid design.'

The romantic character of Rudolph of Werdenberg induces us to copy this author's account of him:

'Werdenberg was now become the darling of his new associates; they sought a recompence for his services; and since every thing appeared within the compass of their valor, they formed the resolution of reinstating him in his hereditary estates. During their march, they met with little opposition: many barons opened their castles, and welcomed them with simulated joy; while those who made any resistance saw their fortresses taken and destroyed.

'Upon their approach to Werdenberg, they were met by a troop of peasants, who hailed the renowned descendant of their former lords, with shouts of triumph. Delighted with the expressions of gratitude, which flowed from the artless zeal of these simple people, and which bore more honourable testimony to the virtues of his ancestors, than all the studied epitaphs which flattery ever dictated, Rudolph thanked them for their attachment and fidelity, in the honest language of a friend. But, at the same time, signified a wish of resigning all his hereditary honors to his younger brother, and of passing the remainder of his days among that gallant people,

with whose happiness he had associated his own. For having now accustomed himself to the pleasures and habits of a pastoral life, scenes of grandeur and magnificence had lost their charms.

'Soon, however, he discovered, that a series of uninterrupted success had vitiated the minds of the Appenzellers, and awakened them to views of interest and ambition; he grew disgusted at the change, and angry with mankind, whose brightest qualities are so transient and fortuitous. Leaving the partners of his glory, he retired to a cottage, situated among his favourite mountains, and united to one of the heroines of Stoss, he passed the remnant of his days in the enjoyment of conscious integrity, and spotless fame, respected and beloved by all the world.'

Recollecting how learned and respectable an assembly was that of the fathers of the council of Constance, we feel no small surprize when we attend to the style of their proceedings towards the celebrated martyr of reform, John Huss:

'Huss no sooner found himself abandoned by the emperor, than he insisted upon a public trial. The request was granted, though not without difficulty. But from the very first sitting, it was evident what kind of treatment he had to expect; for the proceedings of the court were conducted with such indecent violence, and tumultuous confusion, that his voice could scarcely be heard. At a subsequent meeting, he was allowed to answer to a few only of the numerous articles, which were exhibited against him. Among the rest, he was accused of asserting, *that a vicious pope was no pope with regard to spiritual power, and could not, therefore, exercise any legal authority over the faithful.* The charge being read, he modestly requested the assembly to point out the heretical tendency of such an opinion, before he was required to recant it. This was no easy task. The judges, therefore, in order to avoid any difficulties of a similar nature, which the ingenuity of the criminal might raise, came at once to the profligate decision, *that it was unworthy* [*of*] *men, who were endued with the gift of the holy spirit, to make use of any arguments to confute a heretic. It was their duty alone to punish him.* Upon this, all further conference was broken off. Recantation, or death, were the only alternatives offered. The latter, indeed, was of a nature to revolt every mind, that was sensible to the feelings of humanity, or conversant with the laws of honor. But when men are blinded by fanatic zeal, they are insensible to every sentiment but revenge.'

We are persuaded that our readers will share in the pleasure which we felt, in perusing Mr. Naylor's impassioned account of the circumstances which attended the origin of Rhætian liberty:

'That every system of equality, which is founded upon any other principle than the *equality of laws*, is both chimerical, and impracticable, requires little ingenuity to demonstrate. But it is equally evident to a reflecting mind, that the benign views of the Creator

could have never called millions of beings into existence, for no other purpose, than for the sport or pleasure of one. Opinons, like these, require but little rhetoric to recommend them. Yet the name of the man, who first communicted them to the Rhætians, is buried in oblivion. The author of the GRISONS LEAGUE is unknown to posterity.

'Within the jurisdiction of the abbot of Disentis, is situated the romantic valley of Truns. The whole country from Ilanz, to the source of the Rhine, presents a series of the most picturesque objects, that the human eye ever contemplated. Here the loftiest summits of the Alps pour down their stupendous torrents, in a thousand channels, and give birth to mighty rivers. From scenes like these, where nature towers under her most gigantic form, the transition is instantaneous to harmony, and peace. The fertile meadow presents the pleasing picture of cultivation, and furnishes subsistence to the rude native of this sequestered spot.

'It was in a grove, near Truns, that the most reputable inhabitants of the adjacent hamlets met, in the dead of night, to confer upon some general plan for their mutual preservation. They were sensible of their condition, and keenly felt the injuries to which they had been exposed. But no mean ambition had kindled the flame of discord; no base nor interested projects directed their opposition. They sought not for worldly dignities, nor for the pre-eminence of rank: they were strangers to every selfish motive, and scorned alike to traffic in the ruin, or in the prosperity of their country. Even their very names are lost to posterity. And while the pompous mausoleum points out, to the execration of posterity, the faithless minister, or the perjured tyrant, the founders of Rhætian liberty moulder unnoticed in their native dust. It was the innate sentiment of freedom—the wish of establishing some system of equality in the administration of justice—but above all, that noble and manly feeling, which prompts us to promote the comfort and happiness of all our species, but more particularly of those who are connected with us by the ties of consanguinity, or the bonds of friendship—which inspired the resolution necessary for the accomplishment of so arduous an enterprize.

'Upon examining into their resources, they found that they had nothing to depend upon except themselves. But the love of liberty supplies it's votaries with every thing which is requisite for obtaining it. Accustomed, from their earliest youth, to the fatigues of a laborious life, their bodies were of the most athletic forms. Braced by the bleak Alpine blast, their nerves were strangers to every sensation which could indicate fear. Their wants too were few, for they were acquainted with no other pleasures, but those which nature furnished in her simplest state, and which are ever within the reach of those, whose tastes are uncorrupted by the fastidious enjoyments of polished society.

'Such were the men, whom the genius of Rhætia had assembled at Truns. An ancient tradition still exists, that they were in general persons dignified by age, and distinguished by their long *grey* beards. From which circumstance, as well as from their dress, which is said

to

to have consisted of the grey cloathing so much in use in Rhætia, the league was afterwards distinguished by the appellation of the GRISON LEAGUE *.'

The author's picture of Helvetia, at the period at which his history breaks off, must terminate our extracts:

'We leave Helvetia in the enjoyment of happiness, which has seldom been the lot of mortality. Rhætia was at length united with Glaris. The Appenzellers were rewarded, for their generous struggle, by the friendship, and alliance, of the confederates. The jurisdiction of Uri extended to the southern side of the St. Gothard, and filled the pusillanimous minds of the Italian despots with terror and dismay. Schweitz, deservedly venerated as the parent of Helvetic liberty, was equally the dread and admiration of surrounding nations. While Unterwa denwas remarkable for its rigid adherence to all those ancient virtues, which animated the founders of the Helvetic league. By the acquisition of independence, both Zug and Glaris had obtained the ultimate object of their wishes, and by their integrity, their courage, and their moderation, they rendered themselves worthy of so great a blessing. An extensive commerce, the child of freedom, had given wealth and prosperity to Lucerne, Berne, and Zuric, which the energy of their councils, and the courage of their troops seemed likely to maintain. Such is the picture that Helvetia presented, at this happy moment, to the astonished world!'

The quotations which we have now made will suffice to shew the style in which the author writes, and the manner in which he thinks. With those who chuse to make the comparison, they will also serve to place in opposition to our extracts from Mr. Planta's work; and will enable them to judge, in some degree, of the different points of view in which, Mr. Naylor says, the events of this history have been considered by himself and that gentleman.

It is hinted, in the preface, that the encouragement of the public may induce the author to continue the use of his historic pen; and that, if he throws it by, 'it will not be from want of materials.' A long residence on the continent, he says, has afforded him an opportunity of following the revolutions both of Switzerland and Italy through all their maze of horrors; and he adds that 'papers *of the utmost importance* are probably within his reach.'—This is a sort of threat which we hope Mr. Naylor will be prompted to execute.

'* In German *der graue bund*, and in our own language more properly the *Grey league*.'

Jo.

ART.

ART. III. *Lyrical Tales.* By Mrs. Mary Robinson. Crown 8vo, pp. 218. 5s. Boards. Longman and Co. 1800.

IN order to excel in lyric poetry, a happy combination of genius and taste must be formed; since this kind of composition ought not only to display a considerable degree of dignity and elevation, but also those charms and subordinate graces which we admire in the most finished literary productions. Mrs. Robinson, then, may be said to have made a bold attempt; and the critic will not take up this volume with the expectation of finding her completely successful. Her lyre, however, is harmonious, and she has displayed the power of touching the chords with pathos. As her life, though in some periods gay and dazzling, was deeply tinctured with sorrow, her muse is of the sombre cast; and though, being desirous of giving variety to her tales, she sometimes endeavours to be sprightly, her efforts are evidently forced, and she soon relapses into the dark and fearful region of tragical invention. She takes her harp from the willow on which it hung, to attune it to sounds of woe, to harrow up the soul, and to impress on the imagination the melancholy truth that human life is indeed *a vale of tears*. If she described it as she found it, we must not only forgive her, but lament her unfortunate destiny; yet we do not recommend it to our readers to cherish those gloomy representations of our present state, which the wounded mind feels a satisfaction in delineating.

Of the twenty-two tales which compose this volume, those intitled *All Alone—The Lascar—The Widow's Home—The Shepherd's Dog—The Fugitive—The Hermit of Mont Blanc—The Negro Girl—The Deserted Cottage—Poor Marguerite—Edmond's Wedding—The Alien Boy*—and *Golfre*,—are calculated to touch the soul with pity, and to fill the eye with tears. Some of them are composed in blank verse; a kind of measure not strictly *lyrical*, which is an epithet usually applied to a poem adapted to music. In general, however, Mrs. R. has attended to this circumstance; and it must be allowed that the work is no contemptible monument of her poetical genius. As she is now beyond the reach of human advice *, we shall not minutely examine these tales: but, for the benefit of young writers, we must point out an instance or two in which she has violated the truth of nature.

In the tale of *The Lascar*, she thus makes him describe his situation in Asia;

> 'Oft I the stately camel led
> And sung the *short-hour'd* night away;'

* Since the publication of the present volume, we learn that Mrs. Robinson has quitted "this nether world."

forgetting

forgetting that, in the East Indies, the days and nights are nearly of an equal length throughout the year.

In *Golfre*, we find this couplet:

> 'So the pale *snow-drop* faintly glows,
> When sheltered by the *damask rose.*'

Mrs. Robinson must have known that the snow drop and the damask rose never blow together; and that the latter never *sheltered* the former. This is therefore a singular inadvertency.

A line in *The Widow's Home* shews the same inattention to Nature:

> 'Of the *tame* sparrow and the red-breast *bold*:'

it should be,

> Of the bold sparrow and the red-breast tame.

As a specimen of the blank verse, we extract a part of the tale intitled *The Fugitive*:

> 'And, now I mark thy features, I behold
> The cause of thy complaining. Thou art here
> A persecuted Exile! one, whose soul
> Unbow'd by guilt, demands no patronage
> From blunted feeling, or the frozen hand
> Of gilded Ostentation. Thou, poor PRIEST!
> Art here, a Stranger, from thy kindred torn—
> Thy kindred massacred! thy quiet home,
> The rural palace of some village scant,
> Shelter'd by vineyards, skirted by fair meads,
> And by the music of a shallow rill
> Made ever chearful, now thou hast exchang'd
> For stranger woods and vallies.
>
> What of that!
> Here, or on torrid desarts; o'er the world
> Of trackless waves, or on the frozen cliffs
> Of black Siberia, thou art not alone!
> For there, on each, on all, The DEITY
> Is thy companion still! Then, exiled MAN!
> Be chearful as the Lark that o'er yon hill
> In Nature's language, wild, yet musical,
> Hails the Creator! nor thus sullenly
> Repine, that, through the day, the sunny beam
> Of lust'rous fortune gilds the palace roof,
> While thy short path, in this wild labyrinth,
> Is lost in transient shadow.
>
> Who, that lives,
> Hath not his portion of calamity?
> Who, that feels, can boast a tranquil bosom?
> The fever, throbbing in the Tyrant's veins
> In quick, strong language, tells the daring wretch
> That he is mortal, like the poorest slave

Who wears his chain, yet healthfully suspires.
The sweetest rose will wither, while the storm
Passes the mountain thistle. The bold Bird,
Whose strong eye braves the ever burning Orb,
Falls like the Summer Fly, and has at most,
But his allotted sojourn. EXILED MAN!
Be chearful! Thou art not a fugitive!
All are thy kindred—all thy brothers, here—
The hoping—trembling Creatures—of *one* GOD!'

Instead of copying Mrs. R.'s heart-breaking or terrific descriptions, we shall bring our readers acquainted with the ability which she displays in the line of playful satire, by quoting *The Misletoe, a Christmas Tale:*

'A FARMER'S WIFE, both young and gay,
And fresh as op'ning buds of May;
Had taken to herself a Spouse,
And plighted many solemn vows,
That she a faithful mate would prove,
In meekness, duty, and in love!
That she, despising joy and wealth,
Would be, in sickness and in health,
His only comfort and his Friend—
But, mark the sequel,—and attend!

'This Farmer, as the tale is told—
Was somewhat cross, and somewhat old!
His, was the wintry hour of life,
While summer smiled before his wife;
A contrast, rather form'd to cloy
The zest of matrimonial joy!

'Twas Christmas time, the peasant throng
Assembled gay, with dance and Song:
The Farmer's kitchen long had been
Of annual sports the busy scene;
The wood-fire blaz'd, the chimney wide
Presented seats, on either side;
Long rows of wooden Trenchers, clean,
Bedeck'd with holly-boughs, were seen;
The shining Tankard's foamy ale
Gave spirits to the Goblin tale,
And many a rosy cheek—grew pale.

'It happen'd, that some sport to shew,
The ceiling held a MISLETOE.
A magic bough, and well design'd
To prove the coyest Maiden, kind.
A magic bough, which DRUIDS old
Its sacred mysteries enroll'd;
And which, or gossip Fame's a liar,
Still warms the soul with vivid fire;

Still

Still promises a store of bliss
While bigots snatch their Idol's kiss.

'This MISLETOE was doom'd to be
The talisman of Destiny;
Beneath its ample boughs we're told
Full many a timid Swain grew bold;
Full many a roguish eye askance
Beheld it with impatient glance,
And many a ruddy cheek confest,
The triumphs of the beating breast;
And many a rustic rover sigh'd
Who ask'd the kiss, and was denied.

'First MARG'RY smil'd, and gave her Lover
A kiss; then thank'd her stars, *'twas over!*
Next, KATE, with a reluctant pace,
Was tempted to the mystic place;
Then SUE, a merry laughing jade
A dimpled yielding blush betray'd;
While JOAN her chastity to shew
Wish'd "the bold knaves would serve *her* so."
She'd "teach the rogues such wanton play!"
And well she could, she knew the way.

'The FARMER, mute with jealous care,
Sat sullen, in his wicker chair;
Hating the noisy gamesome host,
Yet fearful to resign his post;
He envied all their sportive strife,
But most he watch'd his blooming wife,
And trembled, lest her steps should go,
Incautious, near the MISLETOE.

'Now HODGE, a youth of rustic grace
With form athletic; manly face;
On MISTRESS HOMESPUN turn'd his eye,
And breath'd a soul-declaring sigh!
Old HOMESPUN, mark'd his list'ning Fair
And nestled in his wicker chair;
HODGE swore, she might his heart command—
The pipe was dropp'd from Homespun's hand!

'HODGE prest her slender waist around;
The FARMER check'd his draught, and frown'd!
And now beneath the MISLETOE
'Twas MISTRESS HOMESPUN's turn to go;
Old Surly shook his wicker chair,
And sternly utter'd—"*Let her dare!*"

'HODGE to the FARMER's wife declar'd
Such husbands never should be spar'd;
Swore they deserv'd the worst disgrace,
That lights upon the wedded race;

And vow'd—that night he would not go
Unblest, beneath the MISLETOE.

'The merry group all recommend
An harmless Kiss, the strife to end:
"Why not?" says MARG'RY, "who would fear,
A dang'rous moment, once a year?"
Susan obsèrv'd, that "ancient folks
Were seldom pleas'd with youthful jokes;"
But KATE, who, till that fatal hour,
Had held, o'er HODGE, unrivall'd pow'r,
With curving lip and head aside
Look'd down and smil'd in conscious pride,
Then, anxious to conceal her care,
She humm'd—"*what fools some women are!*"

'Now, MISTRESS HOMESPUN, sorely vex'd,
By pride and jealous rage perplex'd,
And angry, that her peevish spouse
Should doubt her matrimonial vows,
But, most of all, resolved to make
An envious rival's bosom ache;
Commanded Hodge to let her go,
Nor lead her to the Misletoe;
"Why should you ask it o'er and o'er?"
Cried she, "*we've been there twice before!*"

'Tis thus, to check a rival's sway,
That Women oft themselves betray;
While VANITY, alone, pursuing,
They rashly prove their own undoing.'

Some Memoirs of the Life of Mrs. Robinson have lately appeared, which were partly written by herself. We shall pay farther attention to them, at a future opportunity. Mo-y.

ART. IV. *The Charge of Samuel Lord Bishop of Rochester*, to the Clergy of his Diocese, delivered at his Second General Visitation in the Year 1800. Published at the Request of the Clergy. 4to. 1s. 6d. Robson.

REVEALED religion having many open and many secret enemies, it becomes the prominent duty of the Christian Bishop to apprize his Clergy, and the Church at large, of the danger to which they are exposed; and to assist them in repelling every attack that may be made on the purity and integrity of their principles. In discharging this important office, the Episcopal advocate, who sensibly feels the infinite importance of Christianity, will be full of zeal and fervor: but this fervor should be restrained within the bounds of discretion, and this zeal should be associated with charity. A virtuous indignation

indignation must inevitably arise in the breast of every Christian, on tracing the conduct of the French Infidels, and on perusing those writings by which they attempted to discredit and subvert the Gospel. We therefore highly applaud the animation and intrepidity manifested by the Bishop of Rochester, in opposing himself in this Charge to the whole phalanx of French impiety and Atheism. 'The audacity,' the 'brilliancy of unprincipled wit,' and we may add the horridly profane sarcasms of Voltaire, in disseminating Deism; the philosophic ingenuity and subtlety of Diderot and D'Alembert, in propagating the still more shocking cause of Atheism; and the subsequent exertions of their disciples and followers; are proper subjects, especially in these times, of episcopal *ex cathedrâ* animadversion. We must confess, however, that we could have wished that, in the true spirit of the gospel, this champion for religion had "*put to silence the foolishness of these wicked men.*" When he terms Voltaire 'a miscreant' and 'a crafty villain,' and Condorcet 'a wretch,' every cool and reflecting reader will consider these abusive epithets as inconsistent with the sedateness of the episcopal character, and as offensively *out of place* in so serious and dispassionate an address as that of a Charge to the Clergy of the Christian Church. If deists and atheists rail, let not the Christian give them "*railing for railing; but contrariwise,*" let him treat their scurrility with a dignified contempt; opposing solid reason to frothy declamation, and the substantial evidences of the gospel to delusive sophistry.

In the instance of the French Encyclopedie, and in the case of Condorcet, Bishop Horsley has well evinced that even the mathematics were made subservient to infidelity. Of the latter, he says;

'Another instance I would mention, of science pressed into the cause of irreligion, is a work of the Marquis de Condorcet; a profound Mathematician, but a most hardened Atheist, and, as Atheists always are, an enemy to all moral order. This WRETCH, a few years before the French Revolution, composed a work of deep erudition in the Doctrine of Chances; in which Problems of great curiosity and great difficulty were successfully discussed. But the book, besides its visible scientific purport, had a latent moral object; and this was, to insinuate an opinion, that there is no such thing as Certainty; consequently, no such thing as Truth; that verisimilitude (or probability) is the utmost to which we can attain; and that the only standard of verisimilitude is a majority of suffrages. For this problem was the professed subject of the book: "To estimate the probability of right decision by the majority of votes in popular assemblies."

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This is unquestionable; and the general want of faith, in which the French Revolution found that unhappy nation, is a proof how sadly successful these apostles of irreligion had been: but the Bishop goes much farther, and supports *totis viribus* the representations of the Abbé Barruel and Prof. Robison, concerning the existence of a deistical or atheistical confederacy. Here we cannot follow him; and the subject, indeed, has already been sufficiently discussed in our pages: but, whether the French philosophers acted individually or in concert, they stand convicted of writing and speaking against Revealed Religion; and to them in a great degree must be attributed the infidelity with which their country has been deluged. Does the *whole* of the sin, however, lie at their door? Did not the profligacy of the French Court, the nature of their grossly adulterated system of Christianity, and the irregularity of some leading members of the Clergy, aid and assist the labourers in this work? On these collateral causes, Dr. H. is silent; and so far from making any reflections of this kind, he speaks of the French nation not only as one of the most distinguished of Christendom, but one of the most distinguished '*as a Christian nation.*' What we are to understand by this compliment, we are at a loss to divine. Its Monarch, indeed, was styled *Most Christian:* but never was there a people called Christian, whose morals were more corrupted. Not even Republican France could be more dissipated, nor 'use less discretion in the pleasures of women.'—Protestant Divines have for many years been in the habit of referring the Apocalyptic Beast, and Antichrist, to the Pope or the Papal Power: but they are now grown more polite to the Romish church than to call its triple-crowned head, *the scarlet whore of Babylon;* and the Bishop of Rochester refers the dreadful monster, exhibited in vision to St. John, to the *French Republic.*

After having indignantly reprobated the conduct of the French *philosophes* and German Illuminati, and shed some pious tears over the fate of the Gallican church, the learned and eloquent Bishop proceeds to take notice of the state of religion in his own country. Here, while he triumphs over the decline of *Socinianism*, he expresses some fears and apprehensions concerning *Methodism.* We quote both passages:

'The Laity of this country, the great majority I mean, have no better relish for the Socinian heresy than for plain Atheism. They think much alike of him who openly disowns the Son of God, and of him who denies the Father: insomuch that the advocates of that blasphemy have preached themselves out of all credit with the people. The Patriarch of the sect is fled, and the orators and oracles of Birmingham and Essex-street are dumb: or, if they speak, speak only to be disregarded.'

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We leave the Socinians, or the Unitarians, as they now term themselves, to reply to this attack on them; and we submit it to our readers and the public at large, to judge whether Bishop Horsley has not fallen into the same fault for which Dr. Priestley has been justly stigmatized, viz. attributing to the advocates for the opposite faith, conclusions which they absolutely disavow. Dr. P., with extreme illiberality, called Trinitarian worship *Idolatry;* and is not Dr. H. equally unjustified in pronouncing that Socinianism is *blasphemy?* We refer it also to the sense of mankind to determine whether the term *fled*, in allusion to Dr. Priestley's departure from this country, be just and honourable to the Established Church. If Dr. P. *fled*, he must have been *driven;* and can that victory in a matter of controversy be ground for exultation, to obtain which any kind of persecution has been employed?

The passages relative to the Methodists are:

'In many parts of the kingdom new conventicles have been opened in great number, and congregations formed of one knows not what denomination. The pastor is often, in appearance at least, an illiterate peasant, or mechanic. The congregation is visited occasionally by preachers from a distance. Sunday-schools are opened in connection with these conventicles. There is much reason to suspect, that the expences of these schools and conventicles are defrayed by associations formed in different places. For the preachers and schoolmasters are observed to engage in expences, for the support and advancement of their institutions, to which, if we may judge from appearance, their own means must be altogether inadequate. The poor are even bribed, by small pecuniary gifts from time to time, to send their children to these schools of they know not what, rather than to those connected with the Established Church, in which they would be bred in the principles of true religion and loyalty. It is very remarkable, that these new congregations of non-descripts have been mostly formed, since the Jacobins have been laid under the restraint of those two most salutary statutes, commonly known by the names of the Sedition and the Treason Bills. A circumstance which gives much ground for suspicion, that Sedition and Atheism are the real objects of these institutions, rather than religion. Indeed, in some places this is known to be the case.'

To this representation it is added; 'The Jacobins, I *very much fear*, are, at this moment, making a tool of Methodism.' In p. 25, the Bishop more than *fears;* he speaks positively, and from his own knowlege, to the fact. These, he says, were his words in the House of Lords:

'I said, that "Schools of Jacobinical Religion, and Jacobinical Politics; that is to say, Schools of Atheism and Disloyalty, abound in this country; schools, in the shape and disguise of Charity-Schools and Sunday-Schools, in which the minds of the children of the very lowest orders are enlightened; that is to say, taught to de-

spise Religion, and the laws, and all subordination." This I know to be the fact.'

Of all these circumstances, we have never heard one syllable but from this right rev. author; if we had, we should have deemed it our duty, as individuals, to expose them; and if Dr. H. *knows* what he here states to be facts, ought he to content himself with simply mentioning them in a Debate or in a Charge? Such an accusation, or even such an intimation respecting a large body of professing Christians, should be made only on the strongest ground of evidence; and if there be that evidence, it ought to be brought forwards, and put in full force.

When the Bishop proceeds to specify the immediate duty of his Clergy, we read him with approbation and pleasure. His advice to them, in commenting on the words of Paul to Timothy, to "take heed to *themselves* and to *the* doctrine *," (i. e. *the doctrine of Christ;* for Dr. H. judiciously observes that *thy* is a mistranslation,) we wish them all to diligently regard. Here we cannot resist the temptation to transcribe:

'The first part of the injunction, "Take heed unto thyself," is fulfilled in the fundamental part by those, who never suffer themselves to lose sight of the great work, to which the Holy Ghost has called them; and devote the far greater proportion of their leisure hours to useful study, and devout meditation. By the leisure hours of a Clergyman, I understand all that portion of his time, which is not taken up with his public functions. I am not at all aware, that it is the duty of a Clergyman, to assume such an austerity of character, as would entirely exclude him from general society. A different conduct seems to be recommended by the example of our Lord: who, while he went about doing good, refused not to eat with publicans and sinners. I rather think, that the duty of a Clergyman cannot be performed without something of a familiarity with his flock in particular, and with the world in general. Nevertheless, it is always dangerous to Religion, when the manners of the Clergy become too much secularized. This will always lower the order in the eyes of the people, and lessen their general reverence for the offices of Religion. This, however, will not happen, when the private hours of the Clergy, the younger Clergy in particular, are devoted, as they ought to be, to useful studies. The studious Clergyman will not be shy of being seen in public.—He will freely come abroad for recreation; he will make himself agreeable in the company, with which it becomes him to associate; and will not scruple to take a part in their amusements. But he will neither have leisure, nor inclination, to run the eternal round of giddy pleasure; as if diversion were the business of his life, and his professional business only his diversion. On the contrary, a mind habitually intent upon the greatest subjects, and a thirst for the highest knowlege, will discover itself in the dignified sobriety even of his relaxations; which will impress his fami-

* 1 Tim. iv. 15, 16.

liar

liar friends and companions with respect, and the profane with awe; while the latter, however they may delight in the company, and pretend to applaud what they call the free and easy manners, will in their hearts despise, and not seldom to his face make a jest of the jovial gay Anacreon, in the formalities of a gown and cassock.'

O si sic omnia! We are sorry that we cannot extend our applause to this learned Bishop's account of the Sacrament of the Lord's Supper. He seems to us to be desirous of explaining the doctrine of our Protestant Church, respecting this Sacrament, into a very near resemblance of the Popish tenet of transubstantiation.

For the consideration, however, of the remaining parts of this Charge, we must refer the theological reader to the publication itself. In our preceding remarks, we trust that we have not been guilty of disrespect, nor of misrepresentation, nor of uncandid criticism. In solicitude for the honour and advancement of Revealed Religion, we would not be, and we trust that our pages will shew that we have not been, inferior to the Bishop of Rochester: but, confident of the final triumph of divine truth, we would prosecute the warfare against Infidelity and Superstition with temper and dignity; employing no other weapons than those which are sanctioned by the Gospel, and which are equally honourable to the truth and to those who use them.

Mo-y.

ART. V. *A Sermon preached at Dartford,* at the Visitation of the Right Rev. the Lord Bishop of Rochester, Sept. 30, 1800. By George Robson, A. M. Rector of Snodland in Kent, and Domestic Chaplain to the Lord Bishop of Rochester. Published by his Lordship's Command. 4to. 1s. Robson.

OLD Daniel Burgess, being invited to preach an Ordination Sermon, chose for his text—*He made his snuffers of pure gold* (Ex. xxxvii. 23.); and punning on these words, he endeavoured to shew the peculiar purity and exemplariness required of those who undertake the ministerial or clerical function, while the advice of Paul to Timothy forcibly inculcated the same doctrine.—Mr. Robson, who seems to wish to excite in the Christian world more moderate expectations from the Clergy, has selected a text which is scarcely more applicable to the drift of his discourse than Daniel Burgess's *snuffers.* When St. Paul said to the Idolaters at Lystra, "*we are men of like passions with you,*" he meant to declare only that he and Barnabas were human beings, and not Gods:—the position was not designed to lower any reasonable conceptions which the Church might form, respecting the religious and moral con-

duct of its pastors and teachers. According to the Apostolic precept, the Clergyman is not only to be solicitous of *rightly dividing the word of truth*, but of being *an example to believers*; and it is better that the people should expect too much from him in this view, than that he should be encouraged to circumscribe the duties and obligations of his important profession. We do not suspect Mr. R. of holding a different opinion: but we fear that the purport of his discourse will be mistaken, when he accuses an antient Father * and a modern Bishop † of strange misconception, in applying 'to the *individual* and *personal* character of the priest, what was merely affirmed of him in relation to his *office*.' He adds indeed, 'it was not *personal* superiority in the priest above the rest of mankind, which these authors had in view, but it was the superiority and excellence of *spiritual* over *secular* concerns.' Allowing that this was their ultimate object, it by no means follows that the Father and the Bishop had fallen into a misconception. In as much as it is necessary to impress mankind with a conviction of the superiority of spiritual over secular concerns, so far it is expedient that those who publicly inculcate this divine sentiment should be required to express and enforce it, by setting an example of moral and religious purity in their own lives. It is true that it were absurd to exact from the Clergy a personal sanctity which it would be beyond the bounds and abilities of human nature to support: but this limitation does not exonerate them from the duty of peculiar circumspection; nor is it decorous, in a Visitation Sermon, to deliver one syllable which may have the tendency of impressing the minds of its hearers, and especially the younger Clergy, with the idea that they are to be less *examples* than *instructors*;—that they are to be less attentive to *practical holiness* than to *orthodoxy of faith*.

Who ever supposed that the Clergy were 'exempted from the natural passions of humanity?' The question is, are they not in a situation in which they are required, in a peculiar manner, to guard against and resist the infirmities of our nature; and is it not more conducive to the interests of religion to inculcate this watchfulness, than to attempt any apology for lax and negligent conduct?

We conceive that Mr. Robson is not warranted in asserting, as he does in p. 17, that 'the public teaching and expounding of the Gospel is by our Lord's appointment limited to a *certain order*, ordained to that particular function, in *regular* and *unbroken succession* from the Apostles.' Granting, however, this appointed order and this unbroken succession, (to say nothing

* St. Chrysostom. † Bishop Burnet.

of

of an avowed call from the Holy Ghost,) it is surely not unreasonable to expect, from such superior religious advantages, superior religious fruit in the life and conduct of the individuals of this order, as well as in the matter of their exhortations. From men so circumstanced, we ought to look for habitual holiness; though, from the consideration of their being *of like passions with ourselves*, we should candidly excuse some defects.

Had extravagant notions been prevalent concerning the moral conduct of the clergy, or the perfection of the ministerial character, we should not have been surprized at the general tendency of this discourse: but, as the public makes no unreasonable demands on this head, there is more occasion for exhorting them to be *ensamples to the flock*, than to put them in mind of their being *men of like passions* with their hearers. In the conclusion, however, Mr. Robson addresses himself very seriously to his brethren; and we hope that this part will engage them to be more anxious to fulfil the high duty of their function, than prone to have recourse to the infirmities of our common nature, as apologies for habitual defects.

Mo-y.

ART. VI. *Outlines of the Globe.* Vol. III. The View of India extra Gangem, China, and Japan.—Vol. IV. The View of the Malayan Isles, New Holland, and the Spicy Islands. By Thomas Pennant, Esq. 4to. 1l. 16s. Boards. White. 1800.

THE first and second volumes of this production were mentioned in our Review for April 1799, under the title of a "View of Hindûstan;" though we now find that they ought to have borne the same general title which is affixed to the present. From the manuscript to which we then adverted, the volumes now before us have been extracted, and edited by a son of the late ingenious author. To that review, we also beg leave to refer for the plan of the work; which has been extended without alteration to the countries described in these volumes.

Vol. III. The province of Chittagong terminates the possessions of the East India Company, and forms the south east frontier of the suba of Bengal. Adjoining to it is the kingdom of Aracan, which stretches along the coast to an extent of two hundred miles. Its topography is obscure; and the course of its river, the Tocosannæ of Ptolemy, is faintly traced beyond the capital.

'From the mouth to the capital is about fifty miles; most of the way deliciously bounded by woods or plantations, animated by the gambols of the monkey tribe, or the gay flights of numbers of peacocks. The city of Aracan is seated most singularly, in a valley

surrounded with vast and craggy mountains. These are assisted by art, so as to prove the most substantial fortifications. The entrances are cut through the solid rock, as are the gates of the city. The precipitous face of the mountain serves for walls; besides these, it has a citadel, and other artificial defences. The city is said to be fifteen miles in circumference, and to contain a hundred and sixty thousand inhabitants. The regal palace is very magnificent, and highly adorned and enriched with works of massive gold.'

Since the death of Mr. Pennant, the public have learnt that this whole country has been conquered in 1783, by the Burmans; and the particulars of the conquest are detailed in Major Symes's narrative of his Embassy to Ava*. A brief and very erroneous account of the last mentioned country succeeds in the present work: but, previously to the publication of the British Embassy, the topography of Ava was very little known. The same observation applies with equal force to Mr. Pennant's account of Pegu and the Andaman islands; and it is to be regretted that these volumes, which are professedly compilations, appeared so shortly after that of Major Symes, that the editor probably was not able to avail himself of the information supplied by the Major, which would have rendered them as perfect as circumstances would admit.

Mr. Pennant observes that 'the natives of the kingdom of Pegu resemble the Malays in appearance and disposition, but are more industrious. Their masters, the Burmans, (whom Mr. P. still calls Buraghmahs), are liker to the Arabs in their features, and of a darker complexion than the Peguers, (Peguvians); they are much addicted to commerce, and so numerous, even in Pegu, as to exceed the natives as one hundred to one.'—We believe that it is now universally admitted that the inhabitants of the whole Asiatic continent, eastward of India, possess a peculiar and very decided configuration; which distinguishes them, as an original race, from their western neighbours.

The great Andaman is here said to be 'about a hundred and eight miles long, and extends from north to south, between lat. 13°. 53′. and 12°. 16′.; it is nearly of the same breadth, or between thirty and forty miles.' Whether this passage originates in misconception, or in typographical blunder, it were useless to inquire: but the real dimensions are 140 miles in length, and 20 in breadth. We apprehend that the circumstances mentioned by Hamilton, whence he inferred that these islands abounded in quick-silver, must have been destitute of any solid foundation.

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* See M. Rev. vol. xxxii. N. S. p. 113.

The

The Burman empire stretches along the coast, as far south as the port of Mergui, in lat. 12°. 12′. once a flourishing emporium, and the Daona of Ptolemy. 'During the inundations, there is a passage from Mergui to Juthia, the capital of Siam, which may at that season be performed the greatest part of the way on rafts in three weeks, but in the dry season the passage takes twice the time.'

From Mergui, the peninsula of Malacca protrudes in a south easterly direction into the Indian ocean, terminating at Cape Romano, (doubtless a Portuguese appellation,) the most southerly point of the continent of Asia. Its medium breadth is about fifty miles, and of its inhabitants, excepting the Malays, little is known; though the Dutch have long possessed a flourishing emporium on its coasts, and the English have an island in its vicinity. Of the city, we have here the following account:

'Malacca is exceedingly large; much of it is built of strong bamboo, but the several stone buildings, among them the governor's house, make a conspicuous figure. A narrow but deep and rapid river divides the town from the fort, one side of which is washed by the sea; in that part only four leagues distant from the low land of Sumatra. Malacca is a true emporium, or mart, the great magazine of the various rich articles of commerce brought from the several countries I have mentioned. As to the peninsula itself, it yields little more than the fine tin and elephants teeth. Let me conclude, that this place was celebrated among the antients for its gold, for which reason it was called by them Aurea Chersonesus; still, at no great distance from the city of Malacca, is a hill called the Golden Mount. Some imagine this to have been the Ophir of Solomon.'—'If the birds which we know at present by the name of peacocks, were those intended, this, or some other part of India, might have been the place from which Solomon drew his wealth; peacocks being found in plenty here, and unknown, at least in those days, in any part of Africa.'

The author afterward mentions a river which disembogues itself on the eastern side of the peninsula, as abounding in gold; and he adds,

'Well may this country have been supposed to have been another Ophir. Josephus seems to have been right in fixing it here, if his authority was good for saying, that the antient name of this part of India was Sophora, now the land of gold, which comes so very near to that of Ophir. Possibly the word is the Malayan name for the precious metal. M. Le Poivre says, that the inhabitants of Malacca and Sumatra call their gold mines ophirs, and Mr. Marsden, that in the latter island is a hill named Mount Ophir, possibly from its having once been rich in gold.'

On the eastern side, Pahang, Tringano, and Patani, are the only places noted; after which the peninsula closes in the

gulph of Siam. Here, the manners of the Malays are described from M. Le Poivre; and before we quit the peninsula, its animal and vegetable productions are recapitulated.

Mr. Pennant justly animadverts on the very suspicious account given by M. Sonnerat, of the wild men of Malacca, who inhabit the woods and live in the trees; and of whom it was said that, if they see any one pass, they instantly descend and devour him. That traveller even states that he saw one, who was taken young, in the service of a counsellor of Malacca. 'What a treasure,' says Mr. Pennant, 'would he have been to Lord Monboddo!'

The kingdom of Siam occupies the centre of the gulph, stretching its unknown boundaries from the coast, between the Burman dominions on the west, and the territories of Laos and Camboja on the east. Recent publications have added little to our knowlege of this country; and Kæmpfer, with M. de la Laubere, must still maintain their almost exclusive title as the historians of Siam. The river Manam, (which, Kæmpfer says, signifies *mother of humidities*, but we suspect that it is only the Malayan appellation,) the Serus of Ptolemy, flows through its whole extent, and its annual inundations bestow the highest fertility.

'It is deep, rapid, and broader than the Elbe; the upper part is rocky, violent, and interrupted by cataracts; the lower, divided into several channels, passes through a very level country to the sea. The banks of the river are covered with trees, animated by monkies, (*a bold figure*); numbers of villages may be seen on both sides; the houses generally stand, I may say, upon stilts, or lofty posts, so that the water during the inundations may pass without incommoding the occupiers. Near the city of Judia, many of the villages consist of inhabited ships, or floating habitations; these occasionally move from place to place when the waters are high; the inmates keep a sort of fair, and dispose of their various commodities.—Judia, the capital, is seated in lat. 14°. 30′. on a low island in the form of a man's foot. It is surrounded with a lofty brick wall. The streets are straight, and accomodated with canals, which pass quite through from east to west.'

Mr. Pennant states the religion of the country to be the same with that which is inculcated by the Brahmans; this, however, is a mistake, for the Siamese are sectaries of Buddha, in common with all the nations introduced into the volume before us. Were the Chinese objected to us as exceptions to the foregoing observation, we should reply that the religion of Buddha (a name which they have unaccountably corrupted to Foe) is the religion of the court of Pekin, and of a great majority of the inhabitants of China; and that the philosophical tenets of Con-fu-tzee seem nearly confined to the men of letters; so

that

that whether we consider the ascendancy of the court, or the numbers of its votaries, the schism introduced by Buddha, into the Hindu faith, appears to be the prevailing religion among the inhabitants of China. In Japan, as far as we know, it is the only tolerated system.

From the river Liant, a tract of sandy desert skirts the coasts of Camboja, to the town of Pontheamas, which Le Poivre states to have been a Chinese colony. Hamilton found it in ruins in 1720; the French traveller represents it, in the middle of the century, "as the most plentiful granary of the eastern part of Asia; the Malays, Cochin-Chinese, and Siamese, whose countries are naturally so fertile, considering this little territory as the most certain resource against famine:" but the descriptions of M. Le Poivre partake too much of the rhetorical style, to admit of accuracy of detail. The Cattigara, *Sinarum Statio* of Ptolemy, appears to have been in the vicinity of Pontheamas. From Camboja, the yellow gum called gamboge derived its name; sandal wood, sapan wood, stick lac, aloes wood, and a great variety of drugs, are also the productions of this country: but its fertile soil pours forth in abundance all the vegetable products of the eastern world. It was visited in the ninth century by the Arabian travellers, and Mr. Pennant animadverts on their account of unicorns found in Camboja: but the fault lies with their translator; for carcdan signifies the Rhinoceros, in their language.

A small territory named Champa bounds the maritime parts of Camboja on the east; 'the aboriginal people, called Loyes, are large, muscular, and well made; their complexions tinged with red, their noses somewhat flatted; their hair long and black; they have small whiskers, but scarcely any beards; their dress, a shirt and breeches of cotton, the last covered with a sort of petticoat of white cloth, fringed with silk, according to the circumstances of the wearer.' The king of this petty principality resides at Feneri, and is represented as tributary to Cochin-China. Among the mountains, we hear of a people named Moyes, who are described as a savage race; and both Loyes and Moyes are found again between the frontiers of Cochin China and Tonquin: but we wonder that it did not occur to Mr. Pennant, that the persons comprehended under these appellations are the natives of the country generally denominated Laos in our maps, whose dominions appear to extend to the sea, including the small maritime tract of Champa.

The land of Anam, called by the Portuguese Cochin-China, bends its hollow curvature along the coast from lat. 13°. to 17°. 30'. Its wall, built to defend the inhabitants from the incursions of the Moyes, has not availed to secure them from

foreign

foreign invasion; nor did it prevent, in the beginning of the 17th century, a Tonquinese family from mounting the throne.

'The gallies or shipping of the Cochin-Chinese are very numerous; part, allotted to the defence of the coast, are finely painted and highly varnished, rowed with fifty oars, and carry a cannon at the head, and two small ones on each side. Notwithstanding the Cochin-Chinese can neither cast cannon, nor make fusils, their dexterity, says Mr. Borri, in the art of gunnery, is amazing; not one of our Europeans dare enter the lists with them. The navy of this country is quickly manned, every family being bound to furnish a sailor, who serves with great alacrity, for they are well treated, and their wives and children supported during their absence; all are dressed in an uniform, and when they are about to engage, put on a gilt helmet and a cloak, which leaves their right arm quite bare. Numbers of their vessels are employed in the fisheries; the fish are found in vast abundance, and form a great article of commerce; fish and rice constitute the principal food of the Cochin-Chinese.'

The maritime coasts of Tonquin extend from the last mentioned kingdom to the empire of China; its shores are skirted with groupes of little isles; the coasts are very low; and the whole interior is a flat of the richest soil, productive of all the fruits, and possibly all the vegetables, of the tropics. Pastures, or rice grounds, border the banks of the most considerable rivers. The *Rhus Vernix*, which furnishes the beautiful lacquer for japanning, is also a native of Tonquin; its effects are deleterious to those who are employed to gather it, causing swellings, blisters, and acute pains, and sometimes making the skin peel off. 'There are men who will handle the tree or touch the juice with impunity; while others will be visited with all the deleterious symptoms by being in the way of the smoke, or even of the wind which carries the effluvia of this singular tree.' Tonquin also has its river subject to annual inundations. Cacho, the principal city and seat of royalty, stands on the banks, and consists of twenty thousand houses; the walls are usually made of mud and thatch, but some are of brick, covered with tiles. The palace occupies a great extent: but here, as in Japan, and recently in Seringapatan, the king is a prisoner; and his authority is exercised by an officer, whose family have long transmitted the executive power in hereditary succession. The river disembogues itself in the gulf of Tonquin. 'The great Halley gives an account of the surprising tides in this bay; each flux is of twelve hours duration, and its reflux the same; so that there occurs but one high water in twenty-four hours.'

Mr. Pennant's account of China, which he styles the miracle of governments, is particularly superficial and unsatisfactory. The recent embassies have thrown much light on the topogra-

topography, and on the domestic and political œconomy, of this vast nation. These sources of information, indeed, did not exist when Mr. P. compiled his account: but we apprehend that a much more instructive compendium might have been formed even from anterior publications, than that which is now under our inspection.

'The despotism of the Emperor (says Mr. P.) is founded upon law and custom; not expressed, yet fully implied, it seems admitted that he can do no wrong! but it is on the principle that the state is a vast family, that the Supreme Being hath placed him on the throne, in order that he may be a father and a mother to his people. In consequence of this, a strong sense of his duty is continually before his eyes. The mandarines and princes of the blood are at liberty to remind him of any faults he may fall into; and even the people, if they find him negligent, are as ready to become tumultuous as in any other country. The grand secret of government in the Emperor is the unremitting attention paid to the conduct of the mandarines and other magistrates, who are carefully watched, and most severely punished on every failure of duty. He himself is perpetually anxious to consult the good of his subjects, and to avoid incurring their hatred or contempt.'

Fraud and pride are stated by this author to be the national vices; the last being excited by their pretensions to antiquity. 'The founder of their empire is said to be Fo-hi, contemporary with Phaleg and Heber. His subjects were at that time nearly in the state of nature; they fed on what they caught, ate it raw, drank the blood, and clothed themselves with the skins. He taught them to make fishing nets and snares for birds, to rear domestic animals, and instructed them in various arts of life; and, to soften the fierceness of his people, invented music, and the instrument Kin. China was inhabited about two thousand years before the Christian æra, demonstrable from an eclipse observed at that period.' In the same style, Mr. Pennant proceeds to inform us that Fohi introduced the religion of Noah; and that their five volumes, correspondent with the Mosaical history, are esteemed the sources of science:—but do these volumes correspond with the Pentateuch in any thing but number? About 600 years before the Christian æra, Lau-kyun founded the sect of Tau-tse, whose tenets resembled the doctrines of Epicurus; placing felicity in voluptuousness, and denying the immortality of the soul. Confucius, who reformed the religion of China, was born 551 years before Christ, and was contemporary with Pythagoras; and the dogmas of Foe were transported from India, about 65 years after the birth of Christ. They were well acquainted with the circulation of the blood, long before the Europeans attained that knowlege; the practice of inoculation was also prevalent

from

from an early period; and in consequence of the ravages of the small pox in Tartary, the Emperor Cam-hi sent physicians into that country, to inoculate the children of his Tartarian subjects. The art of printing was discovered in A. D. 904: but the Chinese do not use moveable tyyes for that purpose. Paper was first made in the year 95; and gunpowder, though of remote invention, continued, till the arrival of the Jesuits, to be used only on festive occasions, and in fire-works,—in which they excel all the rest of the world. In the art of inlaying with their beautiful varnish, they are surpassed only by the Japanese; and the manufacture of silk is ascribed to a queen of the third emperor, who reigned after the patriarch Fo-hi. Cotton and wool also furnished materials for the industry of the Chinese; and the origin of the porcelain manufacture is too remote to be traced in that country.

After a slight sketch of the coasts of China, Mr. Pennant treats of the peninsula of Corea; and, in a manner somewhat desultory, adverts to some places in the neighbouring countries of China: concluding with an imperfect faunula of that vast empire, but such as in the present state of our knowlege will not prove unacceptable.

'Gin-seng, the celebrated medicinal plant of the Chinese, is found in Tartary, and Corea, and even in the provinces of Shan-si, and Ho-nan, in China itself; but the latter is of an inferior kind. It grows on the steeps of wooded mountains, or rocks, and on the banks of deep rivers. The root which is applied to use is said to be of the shape of a man.'—'It was introduced into England in 1740, by the worthy Peter Collinson, and now flourishes in Kew garden. Linnæus first called this plant Sion Ninsi, afterwards Panax quinquefolium.'—'Our physicians depreciate the virtues of this root so much, that notwithstanding it has found a place in our dispensatory, yet it is not mentioned in the Pharmacopæia of the London College. The power of the medicine may possibly have been exaggerated in China, but I never can believe that a root so universally esteemed in that empire for ages, can be destitute of virtues.'

The experiments, Mr. P. observes, on which the English physicians founded their opinion, were from dried and exhausted specimens.

Among the animals which serve as food to this highly civilized people, the author enumerates dogs, cats, badgers, rats, and bats. The white breasted Crow leaves China and the Mongols country in vast flights in the spring, and emigrates into the neighbourhood of the lake Baikal. Peacocks are found in vast numbers, in a state of nature as well as domesticated. Mr. Pennant enumerates seven species of pheasants in China; the golden is not uncommon in the British mena-

geries, and is hardy enough to bear our climate in a state of liberty, if the brilliancy of its colours did not make it the mark of our poachers, and quickly bring on its extirpation. 'The Chinese in severe weather keep their hands warm by holding a partridge, or the Chinese quail, between their palms, as appears in many of their painted papers.'—Among the fishes, we find the following account of the *Tetrodon Hispidus*:

'The length of this species is about nine inches; the upper part of the body is smooth, and of a green color; between the pectoral fins, across the back, is a crescent, black in the middle, bounded on all parts with bright yellow; the belly covered with whitish spines. It can blow itself up into the form of a round ball. This, and some other species of the same genus, are frequent in the Chinese and Japanese seas. This specimen was taken in the Canton river. The effects of eating it are dreadful; if eaten entire, it is the most fatal of poisons, and even when dressed according to art, has had mortal consequences; yet such is the rage of epicurism, that many people will not forbear this tempting viand. It is often used by such who in despair wish to remove themselves into the other world. The Chinese boil with it a branch of the Illicium Anisatum, in order to secure the effects. Such is the strange but true history of this deadly fish.'

It now remains that we should pursue our analysis to the Isles which, commencing in the seas washing the south of China, sweep an irregular line to the utmost limits of our geographical knowlege.

Formosa lies opposed to the coast of Fu-chien, at the distance of about sixty miles from the nearest place. The length is ninety leagues, and the greatest breadth about thirty. Notwithstanding its proximity, it remained unknown to the Chinese till 1430, and continued independant of that government for more than two centuries later.

'The greater part of the western side is inhabited by Chinese, the natives have the eastern entirely to themselves; those which continue on the western are not better than servants to the colonists, except the inhabitants of three out of the twelve districts formed by the Chinese, which have revolted. The Formosans are a fine people, and of remarkable swiftness, which they attain by practice, so that they can outrun a horse at full speed. Their shape is easy and slender, their complexions olive, and their hair sleek, and hanging over their shoulders. In the southern part of the isle they wear a linen wrapped round the middle, and falling to the knees. in the northern, the skin of a stag made into a sleeveless jacket. Their bonnet is formed of Banana leaves, adorned with tufts of the feathers of cocks or pheasants.'

The situation of this island has probably undergone some change since the above was written; for in 1787, M. de la Péyrouse

Péyrouse sailed through a Chinese fleet destined to transport troops to quell an insurrection which had broken out in Formosa.

The Liquejo, or, as they are named by the natives, the Riuku Isles, intervene between Formosa and Japan. Kintchin is the most considerable in point of size, and is inhabited chiefly by Chinese, who fled from the Tartars during the last revolution. On their arrival, they found a people speaking a dialect of their own language; yet it appears that the religion of these isles partakes more of the Japanese than of the Chinese origin; since they have a Dairi or ecclesiastical governor, to whom they pay great respect, and whom they suppose to be lineally descended from the gods of their country. He resides at the isle called by Kæmpfer, Jajama, not remote from Osima, an island of second magnitude. That island, and another larger, called Tanasima, (Sima signifies an island,) 'with several lesser, extend north and south to the Liquejo islands, and form the links between them and Japan. Between the isle of Tanasima and that of Liquejo, are the straights of Van Diemen.'

The Japan isles extend from the 30th to the 40th degree of north latitude. 'The coasts are rude and rocky; and the circumambient seas, which rage with storms during nine months of the year, are shallow, filled with shoals and rocks, and extremely subject to frequent shipwrecks. Off this coast are two dangerous whirlpools, not less tremendous than those of the famous Maelstrom near the Norwegian shores; there are frequent instances of ships being absorbed in the vortex, and of their shattered fragments being flung up at the distance of many leagues. The poets of Japan make constant allusions to these horrible phænomena.'

From Kæmpfer and Thunberg, Mr. Pennant has extracted his information relative to the Japan isles; though unfortunately he had not the full benefit of the discoveries of the last mentioned intelligent writer, whose travels did not appear till two years after this account was composed. Among the articles in the Flora, we remark Tobacco; which plant, with the habit of using it, was introduced by the Portuguese.

'The camphor-tree, *laurus camphora*, grows to a vast size in all parts of Japan, and its islands.—The camphor is extracted from the wood by the peasants, who cut it into small pieces, and boiling them in water, obtain this drug, which they sell very cheap. The Japanese value the camphor of Sumatra and Borneo much more than their own; the last is native, and gathered on the stumps of the trees, or taken from the interstices in small chrystallized lumps. There is another kind found fluid, which is called camphor oil, but never on the same tree with the concrete.—Neither of the trees which yield the Sumatran or Bornean camphors are yet ascertained. Kæmpfer

says, *ex Daphneo sanguine non est*, so it certainly is not even of the same genus as the Japanese.'

This matter has since been elucidated by Mr. Macdonald, in a paper published in the Asiatic Researches; who mentions having seen a tree near Tapanuli in Sumatra, from which three pounds of camphor and two gallons of oil were procured. The tree he describes as of the *Enneandria Monogynia* of Linné, differing in a small variation of the leaf from the *Arbor Camphorifera Japonica*, and very much resembling the Bay.—We remark, also, with the greatest surprize, *Nymphæa Nelumbo*, and *Ocymum Inflexum*, which are said to be sacred to the idols. These are the beautiful many petalled lotos, the emblem in Hindustan of the consort of Siva, and the flower on which Vishnu is represented reclining in the midst of the waters; the second is the Tulasi, sacred to the last deity in the character of Heri:—but do the Japanese worship these Indian deities?

As Mr. Pennant's account of Japan can present nothing new, we shall abstain from quotation. The voyage of M. de la Péyrouse has totally changed our ideas of the position of the countries to the north; and the editor of this volume has very properly subjoined, in a note, the alterations on our maps which that unfortunate navigator's discoveries suggest. It now appears that the Japanese apply the term Jesso to the small island formerly known by the name of Matsuma, from its chief town, the seat of a Japanese colony. Twelve leagues north of this isle, commences the land of Sacchalin, which stretches to the mouth of the river Amur; where it is only separated from the continent by a creek, insufficient to admit the passage of a ship. This island, or *presqu'isle*, extends from the 46th to the 54th degree of north latitude. The opposite coast of Eastern Tartary presents a thick forest, abounding with wild animals, but rarely trodden by the foot of man; though the appearance of tombs, with Chinese coin and silver ornaments scattered near them, on the earth, bespeak the occasional residence of the wandering Tartar.

We have now concluded our analysis of the third volume of this work, and must defer to our next number some account of the contents of the fourth.

[*To be continued.*] **Ham.**n

ART. VII. *A Letter, addressed to John Whitemore, Esq. M. P.* Member of the Committee of the House of Commons on the Coal Trade; pointing out the impolicy of the proposed Measure of obtaining a Supply of Coal from the manufacturing Districts to the Metropolis, the Causes of the High Price of Coal, and the Means of an immediate and continued Reduction of Price. By Henry Grey Macnab, M. D. 4to. pp. 52. 5s. stitched. V. Griffiths. 1801.

FOSSIL coal being a most essential article of domestic commerce*, it is important to have all the circumstances relative to it well understood; and the writer who ably discusses this branch of internal trade may be pronounced to be a contributor to the public weal. Dr. Macnab appears to us in this light; and though he may be suspected of leaning somewhat to the side of the coal owners, he manifests such a real knowlege of the subject, that he must be perused with satisfaction and advantage. Independently of the object which he has principally in view, he details a variety of interesting particulars respecting *both ends* of the coal trade.—It may not be generally known that 'the Newcastle chalder should weigh, by act of parliament, 53 cwt.; and that eight of these chalders are equal to fifteen London *pool* chalders;' to which it should be added that the chalder, or chaldron, ultimately delivered to the consumer, is still less than the chaldron in the pool: whence it will be perceived that the word chaldron conveys very different ideas, and that this confusion in the use of the term must open a door to deception and fraud. Dr. Macnab has proposed no remedy for this evil: though he has not been inattentive to the taxes on coals of every description, and has suggested a mode by which they may be equalized, viz. by levying a given proportion of income, on the principle of the Income Tax.—As there is no prospect of such a measure being adopted, we may spare ourselves the trouble of commenting on it.

Dr. Macnab considers the coal trade as dividing itself into three leading branches,—coal mining,—the carrying trade,—and the business of unloading, buying, selling, and delivering the article of coal in the different sea-ports, coastways, and particularly in the city of London.

On the first branch of the subject, he offers this general information: 'The sums expended in boring, sinking, drifting, purchasing materials, such as wood, iron, ropes, bricks, and other articles necessary in coal-mining, independent of the money paid for the exclusive privileges of working collieries, and way-leave-

* Dr. Adam Smith deems it *a necessary of life.*

rent,

rent, amount, in common, from six thousand to forty thousand pounds and upwards, on each colliery.'

This statement must impress an idea of the magnitude of the trade, which the subsequent details will confirm. It appears from the author's calculations, on which he says we may rely, that the number of persons employed in and dependant on the coal trade, on the river Tyne, is 38,475
The number of persons employed, &c. on the river Wear - - - 26,250

Making a grand total on the Tyne and the Wear of 64,725

To this estimate he adds a statement of the amount of the capitals employed in this trade; which will be found, he believes, to be pretty just.

There are upwards of 50 collieries in the neighbourhood of Newcastle and Sunderland; the capital employed in which, including the cost of Keels, &c. is upwards of £.1,030,000
The capital employed in shipping in the rivers Tyne and Wear, in the coal trade, - 1,400,000
The capital employed by the buyers in London exceeds, on a moderate calculation, - 700,000

Total of capital employed 3,130,000

Respecting the management of the coal business in the river Thames, it is remarked that

'The *Coal Trade* alone, which exceeds the foreign commerce in the number of ships annually discharged, requires double the number of craft which is found necessary for the whole import and export trade of the river. 2196 barges, averaging about 33 tons (amounting in the whole to 72,468 tons) are chiefly employed in the coal importation.

'On some occasions, about 90 colliers (each requiring, on an average, 13 barges) are discharging at once, 1170 coal craft will then be laden with coals, occupying different parts of the Pool at the same time; while the chief part of the remaining craft, above and below bridge, are used as floating warehouses, until the coals can be disposed of

'The monthly supply of coals for the metropolis is estimated at 300 cargoes, of 220 chaldrons each, or 66,000 *chaldrons.* It is therefore no unlikely supposition, that (with some exceptions) 50,000 chaldrons, on an average, remain exposed to depredations in open craft on the river all the year round.'

After this view of the extent and importance of the coal trade, Dr. Macnab proceeds to plead the cause of the coal owners of the North; and to justify a sort of combination among them, which he maintains to be as much for the public

benefit as for that of the individuals concerned.—It is acknowleged that 'a general agreement had been entered into by the coal owners to vend only a proportional quantity of coal in a given time from each colliery;' and the Dr. contends that it was necessary to prop up the coal trade by such a regulation, which, though in its complexion it be contrary to law, is good in spirit, and beneficial in its effect. For this purpose, he adduces the evidence of Nathaniel Clayton, Esq. given before the Coal Committee of the House of Commons; and it must be confessed that he makes a plausible case in behalf of the coal owners; for Mr. C. thus strongly expresses himself: "I have no doubt, that one of the motives which led to this agreement, was the securing to the mine adventurer, an adequate profit upon that adventure; and I am equally clear (meaning to give a most impartial judgment on the question) that the public have been in the final result materially benefited by the operations of the agreement." By this last assertion, Mr. C. means that collieries have thus been worked, and made to yield a regular supply at a legitimate price, which otherwise must have been abandoned; and which, if once abandoned, could never have been resumed.

Such is the manner in which the author resists the censure directed against the coal owners of the North for their combination: but we have not local knowlege sufficient to decide how far his arguments are convincing. He speaks with much confidence on the subject which he discusses; and he hopes that the views which he has taken of it will not be deemed irrelevant, when the wide range of its operation is fully considered.

Dr. Macnab contends that a sufficient difference is not maintained between the price of the superior and that of the inferior coals, and that considerable inconveniencies arise from this circumstance. He says; 'I have made many experiments on the superior and inferior Newcastle coals for domestic use; and I have invariably been of opinion, whether we have in view economy or comfort, that the best Newcastle coal is preferable to the worst, in much higher proportion than the relative prices at market.'

Few will be able to decide on the general question here discussed: but of this concluding remark every house-keeper is able to appreciate the value, and may apply it to a *saving* purpose.

The subject again comes under consideration in the succeeding article.

Mo-y.

ART. VIII. *Observations on the probable Consequences of even attempting by Legislative Authority to obtain a large Supply of Coal from Staffordshire to the Metropolis;* on the Iron Trade in Staffordshire and Shropshire in the large way; on the Iron and Copper Trades at Birmingham in the small way; on the Price of Coal to the Inhabitants of London and Westminster; on the Collieries in the North; on the carrying Trade of Sunderland and Shields; and on the Navy of Great Britain. In a Letter to William Manning, Esq. M. P. Chairman of the Honourable Committee of the Coal Trade. By Henry Grey Macnab, M. D. 4to. pp. 112. 10s. 6d. stitched. V. Griffiths. 1801.

IN this second letter, written at a short interval after the first, (see the preceding article,) Dr. Macnab prosecutes the important discussion relative to coal and the coal trade; and though he has here avowed himself to be deeply interested * in the general subject, we are not the less solicitous of following him through his statements, and arguments, which he has been very indefatigable in collecting and arranging. Persuaded that they may be instructive as well as amusing, we shall proceed to the enumeration of some of them.

We are informed that 'the thickness of the main veins of coal about Dudley in Staffordshire is in general from ten to eleven yards, but varies from eight to thirteen yards; and that there the best coals are sold at the pit for 6s. per ton of 21 cwt. of 120 lb. to the cwt.'

That 'the seams or veins of Yorkshire coal are from three to ten feet thick, and that the best Silkstone coal is worth at the pit 3s. per ton.'

That 'the Cumberland mines, worked by 570 pitmen, produce per week 3960 waggons, each waggon containing one London chaldron and a quarter;'—and that

'Newport coals (supposing the scheme would answer) might be brought from Wales by the canal navigation, to the annual amount of from 50 to 100,000 tons.'

Abundant as the mines of coal are in the internal parts of the kingdom, Dr. Macnab resists the idea of opening a supply for the metropolis from these sources. He lays before us, however, the opinions of Mr. Raby and Mr. Hardy, given in evidence to the Committee of the House of Commons on the Coal trade; the former of which considers, in opposition

* His words, perhaps, ought to be given: 'My situation in life, embarked as I am extensively in the lottery of mining, affords daily arguments which compel me to be "feelingly alive" to every measure which will risk, even in the most distant degree, the regular movements of the members of the unwieldy body of miners and manufacturers.'

to the principle maintained by the Doctor, 'a competition between the Staffordshire and Newcastle collieries as the only means of keeping down the price;' and the latter deposed that 'the opening of a new market for coals of the district, about Bradford in Yorkshire, would not much enhance the price to the manufacturer, as the quantity of coals is so great that there are sufficient for both.' To rebut this testimony of Mr. Hardy, it is remarked that he means only the quantity of *unworked* coal, or the quantity in the bowels of the earth; and that he has not taken into consideration the difficulty of obtaining an increased number of pitmen. A correspondent of Dr. M. also has declared, that 'there cannot be two opinions about the injury which the Shropshire and Staffordshire manufactories would sustain from the exportation of large quantities of coal from these countries;' and he himself positively asserts that 'destructive evils would be consequent on the very *attempt to establish* the plan in agitation, of an inland supply of coals, by canal navigation, duty free.' 'A short time (he says) will prove that the new source will neither be so convenient, nor economical as the old. In the mean time, many of the mines of inferior coal in the North will be lost, and should a continued frost take place, such as we have frequently had within these ten years, the metropolis would be completely at the mercy of the collieries of the North.' His doctrine therefore is, that it is for the benefit of London and Westminster to depend on these Northern collieries, as they have been accustomed to do; since in these cities the supply from them has been so abundant, excepting under the extensive operations of war, as to reduce the price of the article so much as to render a regulation in the trade necessary, in order to prevent the ruin of the inferior mines.

All these objections merit the attention of the legislature: but, as they are far from being unanswerable, they will perhaps excite the animadversions of some gentlemen, who to a general view of the subject may unite that local knowlege which we cannot be supposed to possess. The opening of a new source of supply of coals for the metropolis, and the parts adjacent, must produce some changes in the trade, and some injury to individuals: but that specific measure may not be so national a tragedy as Dr. Macnab has supposed. However, it ought in all its parts and relations to be fully discussed; and we shall therefore attend him in his statements of the operation of the proposed measure on the iron and copper trades. We are informed that 'the quantity of bar iron made in Great Britain, when wood charcoal was used for that purpose, was never more than 20,000 tons in one year;—that on account of the

scarcity of wood, it was reduced to less than 13,000, at the time when the mode of making iron with mineral coal was introduced:'—that we then imported from 60 to 70,000 tons of bar iron:—that we now make three times as much as formerly, and have diminished the import one third;—and that, if our exertions be not obstructed, we shall in ten years more reduce it another third, producing an advantage to the country of upwards of 1,000,000*l.* per annum. Such a trade as this, it must be for the interest of the Government to promote. Now it appears, by a variety of calculations and estimates given in these pages, that, if, by opening a communication with the London market, the price of coal in the manufacturing countries be raised 2s. per 20 cwt. the pressure on the iron trade would be great; and that, if the advance exceeded 2s., the iron trade in the large way would be at a stand.

The effect on the copper trade is also detailed; and some facts are exhibited which ought to arouse our vigilance, and induce us to act with wisdom. It is stated that the copper manufactory at Birmingham 'has decreased one half;—that much pains have been taken in France, Germany, and Italy, to rival us;—and that the very change of religion, by abolishing the extravagant number of holidays in Roman Catholic countries, has assisted the growth of foreign manufactures. Hence we have lost several of the foreign markets. "If all other circumstances were equal, (says the ingenious and celebrated Mr. Bolton,) we might defy rivalry on the continent: but *labour cheaper, and the raw material cheaper*, there is no doubt but that in time they might rival us."

To counteract this rivalry, is a matter of infinite importance; and Dr. Macnab's general ideas on the system to be pursued evince a liberal and philosophic mind. We must maintain our superiority in mining and manufactures: but how is this to be effected? By honesty and moderation, which form the best policy with nations as well as with individuals;—by bettering the condition of the poor, and thus preventing emigration;—by changing the system of taxation, and particularly by considering the tendency of taxes on the necessaries of life;—by abolishing the poor rates;—and by a general amelioration of the people.

The author does not omit the argument in favour of the North country coal trade, that it is the great nursery of the British Navy:—a consideration which will ever have its weight with government.

Before he concludes, the Doctor returns to the charge respecting the agreement between the coal owners of the North. He contends that 'coals, *at* and some time *after* peace, are

sold in London at a *lower rate*, than if the trade was suffered to *find its own* level;' and he condemns the measure of an inland supply by the canals, as 'carrying on the face of it the greatest *weakness*, *rashness*, and *danger*.'

We have thus given the outline or substance of this gentleman's pamphlets; being convinced of the great national importance of the subjects to which they relate, and respecting which various prominent facts are here very ably stated. When the writer avows that he is generally interested in the mining trade, it may be also supposed that interest has had its share in the present question: but he solemnly declares the contrary to be the case; for he affirms that, having considerable shares in three collieries near the Severn, '*had the measure of supplying the metropolis with coal from Staffordshire been practicable, to have embraced it would have been one of the most fortunate circumstances of my life.*'

We are pursuaded that Dr. Macnab has delivered the honest convictions of his mind; yet it is to be considered that his discussion affords but one view of the subject. If it be impolitic to tax coals, as being a necessary of life, it may not be unwise to extend their use by internal navigation as far as it may be possible. Canals will produce a change in the coal districts, because they must increase the demand for this article: but, if it be so abundant as it is stated to be, and miners increase with the increased demand, the evil may not take place to the extent apprehended by Dr. Macnab.

Mo-y.

ART. IX. *A New System of Mineralogy*, in the Form of Catalogue, after the Manner of Baron Born's Systematic Catalogue of the Collection of Fossils of Mademoiselle Eléonore de Raab. By William Babington, M. D. Assistant Physician, and Lecturer in Chemistry, at Guy's Hospital. 4to. pp. 279. 15s. Boards. W. Phillips, &c. 1799.

THIS volume may be regarded as a continuation of Dr. Babington's Systematic Arrangement of Minerals, published in 1795, which was noticed in the 19th vol. of the M. R. *N. S.* p. 101. At that time, we expressed a wish that the Doctor would furnish the public with a descriptive catalogue of his valuable collection, and we are now happy in finding that wish completely gratified.

In a prefixed advertisement, the author observes that

'The work itself will shew of what assistance he has principally availed himself; that in the distribution of his system into Classes, Orders, Genera, and Species, as founded on *chemical* and the varieties on *external* characters, he has nearly adopted the arrangement of Baron Born, in his catalogue of the Collection of Mademoiselle Eléonore

Eléonore de Raab; that Romé de Lisle has been his guide on the subject of Crystallization; that most of the genuine descriptions correspond with those of Widenmann and Emmerling, disciples of the celebrated Werner; and that he is chiefly indebted to Mr. Kirwan for what respects the chemical properties and analyses of the different species.'

Salts form the first class in Dr. B.'s new system; and although this arrangement is different from that of Werner, Emmerling, and Widenmann, yet it appears on the whole to be the most eligible; since we are thus led, by natural transitions, from the class of saline bodies into that of earthy substances: at the beginning of which, Dr. B. has judiciously placed lime, strontian, baryt, and magnesia.—These approach the most nearly to the saline character, and are therefore very properly arranged immediately after the Salts.

The second class, or that of *Earths*, consists (according to Dr. B.) of eight which are considered as primitive earths, viz. lime, strontian, baryt, magnesia, alumine, silex, adamantine earth, and the earth of the jargon: but from these, the adamantine earth must be removed, for the reasons mentioned in p. 113; and it would be proper, in a future edition, to add glucine, agustine, and yttria, which have been lately discovered. The acknowleged primitive earths, at this time, amount therefore to ten; of which seven are mentioned in the present work.

Class III. is that of *Metals;* and here again Dr. B. differs from other mineralogists. They have commonly placed the inflammable substances before the metals, but he has arranged the bitumens, &c. &c. in the fourth class.—We do not find the cause of this alteration explained; nor can we perceive any important reason for it. Indeed, it appears to be of little consequence whether the metals precede the inflammables, or the inflammables come before the metals.

The class of *Salts* is subdivided into two orders, the first of which comprehends the simple saline bodies, viz. acids and alkalies; while the second includes the compound salts formed by the union of the acids with potash, soda, and ammoniac:—so that these last-named substances, or bases, constitute the genera of the second order, which (as usual) are subdivided into species and varieties.

The class of *Earths* consists of three orders; the first is formed of homogeneous stones, &c. or at least of those which are commonly considered as such. The second contains the mixed substances, or compounds of the foregoing earths and stones, having their integrant parts so blended as not to be visibly distinct. The third is composed of aggregated stones,

in which the earths or stones of different kinds are in a state of visible mixture.

The different primitive earths form the genera of these three orders, and these genera are subdivided into species and varieties.

The class of *Metals* includes two orders; the first comprehending the ductile metals, viz. platina, gold, quicksilver, silver, lead, copper, iron, and tin; and the second consists of the brittle metals, or those which have been frequently and improperly called semi metals; these are bismuth, nickel, arsenic, cobalt, zinc, antimony, manganese, scheelium or tungsten, uranium, molybdena, sylvanite or tellurium, titanium, and chrome. Each of the foregoing metals naturally constitutes a distinct genus; and the combinations or ores form the species and varieties.

The fourth class contains the inflammable substances, which Dr. B. divides into three orders, viz. 1. aeriform, 2. liquid, and 3. solid. The first order includes only two species of hydrogen; namely, common hydrogen gas, and sulphurated hydrogen gas.

The second has three species. 1. Naptha; 2. Petroleum; and, 3. Barbadoes or mineral tar.

The third order, which is by much the most numerous, consists of five genera, viz. 1. solid bitumen, 2. amber, 3. mineral tallow, 4. sulphur, and 5. plumbago; which, like the genera of the other classes, are subdivided into species and varieties.

The volume concludes with the volcanic productions; and these, according to the Appendix to the Systematic Arrangement, are divided into three genera, 1. cinders, 2. lava, and 3. vitreous lavas.

Having stated the general plan of Dr. B.'s new system, we must refer to the work for the description of the species and varieties: but we shall observe that this part appears in general to be well executed; and that the specific gravities and analyses, which Dr. B. has selected and added, very much increase the utility and value of his book.

In the event of a future edition, some articles must necessarily be added; and some corrections also should be made. For example, as to the first point; the three newly discovered primitive earths, glucine, agustine, and yttria, should be added; as also the sulphurate of strontian, called celestine, from Pennsylvania; and that which is found near Bristol. The crystallized muriate of copper, from Peru, lately analyzed by Klaproth, may be added as a variety of the 7th species of copper ores.

With respect to corrections; we observe, in p. 215, that bismuth is marked *genus* 9, which is evidently a mistake; since,

according

according to the system, it ought to be genus 1. of the second order;—and in page 26, a ludicrous error has occurred, by *Appetite* being printed for *Apatit*.

M. Klaproth discovered that the *jargon* consists principally of a peculiar earth, which he called jargonia, or zirconia; and he has since found that the hyacinth, or jacinth, is composed of ingredients similar to the jargon, but that the jargonian earth is present in a greater proportion.—Accordingly, in page 114 of Dr. Babington's work, we find that the jargon contains,

Jargon earth - -	68
Silex - - -	31,5
Oxide of iron and of nickel	0,05

and in p. 69. we observe that the hyacinth contains

Jargon earth - -	70
Silex - - -	27
Oxide of iron - -	5
Loss - - -	4,5.

Why, then, has Dr. B. arranged the latter in page 69 as species 10 of the siliceous genus?

Elastic quartz, (p. 87,) or flexible sandstone, is a primitive quartzose grit, *visibly intermixed* with mica; we think, therefore, that it more properly belongs to order 3, or that of aggregated earths and stones.

Various stones are known by the name of avanturine: but that which is brought from the Cap de Gute in Spain (p. 91) is a ferruginous quartz, and not a chalcedony.

In page 97, crystallized horn-stone, or petro silex, is mentioned: but it is now scarcely doubted that all those, which are called crystallized horn-stones, are only casts formed in cavities left by the decomposition of crystals of other substances; and, if so, the term crystallized horn-stone should not be employed.—For the same reason, we have great doubts in respect to what is called crystallized jasper (p. 99); and we perceive that Dr. B. remarks that 'these are probably *secondary crystals*;' an expression apparently taken from the German *after kristall*:—but both of these terms appear improper, if they be intended to convey an idea of a substance which has been moulded or cast.

The honey-stone, or honingstein (p. 273), is arranged as species 1. of the second genus, or that of amber: but the experiments lately made by Klaproth and Vauquelin prove, in a convincing manner, that this substance is composed principally of alumine; which, together with very minute portions of lime and silex, is combined with an acid *sui generis*, somewhat resembling the oxalic acid, and which M. Klaproth has

has denominated *acidum melliticum* *. The honey-stone, therefore, must in future be removed from the class of *inflammables*, and be arranged under the genus *alumine*.

We have now discharged our duty, in taking notice of those articles which appear to require some future alteration: but we must also remark that, considering the nature of the work, these are much fewer in number, and of less importance, than we might have expected; and we have no doubt that Dr. Babington's New System of Mineralogy will prove of great utility, and well calculated to promote the advancement of mineralogical knowlege. Hatch. 1st Art.

ART. X. *Old Nick:* a Satirical Story. By the Author of A Piece of Family Biography. 12mo. 3 Vols. 10s. 6d. sewed. Murray and Highley. 1801.

IN the xxxth volume of our Review, (p. 370,) the former work of this author was introduced to the notice of our readers; and as we thought of that publication, so we may say of the present, that it is one of the few which repay the toil of perusal. With us, such performances possess additional recommendations: since, as they demand no violent exertions of our critical energies, we glide easily along their pages, and for a time give to the winds all the cares, the stern virtues, and the severity of our office. Yet, while we may thus seem to be remiss, we are preparing to act with the greatest propriety; for if we plainly state the impression which has been produced on us by a book like the present, — a book of entertainment, — we probably discharge our duty most fairly towards the author and the public.

On such a production as this, we are not inclined to be sedulously minute in our criticisms; nor are we disposed to give too great a prominence to any objections which may occur in our minds. It was intended to amuse rather than to instruct; it does not claim distinction for accurate narration of facts, nor for long processes of subtle reasonings; it neither aims at the nicety of metaphysical distinction, nor at the splendor of varied amplification; it attempts not the force of argumentative discussion, the pathetic appeals of eloquent morality, nor the luxuriant description of natural scenery. It has different claims; while it makes no appeal to our critical learning and perspicacity, it demands to have its merit decided on the proper grounds of judgment. "Were you pleased, or

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* *Annales de Chimie*, Tome xxxvi. p. 203. and xxxvii. p. 88.

not,

† By Mr. Du Bois, author of the Wreath &c

not, during the perusal of the story?" This is an appropriate question, and when we answer, "Yes," we seem to have decided on the work in a manner the most satisfactory:—but, if we be strictly interrogated concerning its excellencies and its faults, we shall then be compelled to ascend the chair of criticism; and begin to talk of plot, action, character, and sentiment, &c. &c.

The story is simple. Barclay Temple, the hero, is educated with the expectation of receiving a large patrimony, and is in consequence sent to Oxford; where he forms an acquaintance with Keppel Von Heim, a young man of great talents, but austere, irascible, revengeful, reserved, and mysterious. From Oxford, he is called to attend the death-bed of a repentant and agonized father; who, in schemes of speculation unknown to Barclay, had dissipated his abundant fortune. The circumstance, however, which weighs most heavily on the conscience of the dying father, was the seduction and subsequent desertion of a female who had borne him a son.—After having passed some time in London, Barclay finds his resources diminish, and is obliged to seek for employment. At length, his friend Keppel procures for him a situation in the house of Mr. Pawlet, a worthy clergyman, who is afflicted with a wife deeply versed in biblical learning, in science, and in philosophy; prone to dispute, and to exhibit her skill in contentious argumentation. Here, Barclay's occupation is to transcribe for this lady the texts and commentary of a Polyglott bible:—but Love, without which life and novels would be insipid, interrupts his serious labours. He had formerly seen, with feelings of the most lively emotion, an unknown beautiful female; and this fair *incognita* proves to be an inmate at Mr. Pawlet's house, and the intended wife of his friend Keppel. Unfortunately, gratitude and friendship yield to the impressions which the virtues and beauty of the lovely Penelope made upon his heart; and a mutual passion arises, of which Keppel is at length informed, with circumstances of exaggeration, by a French Abbé, the minister to the pleasures of a Mr. Buckle, who designs Penelope to be the victim of his unlawful passion.

Keppel, enraged at the supposed perfidy of his friend, hurries to Mr. Pawlet's rural dwelling, obtains the dismission of Barclay, and, pursuing the gratification of his revengeful temper, employs bailiffs to arrest this calumniated young man. Barclay in consequence flies to London; where, after some trifling incidents, he is caught, and confined in the King's Bench Prison, from which he is liberated by the benevolence of the brother of Mr. Pawlet. On his way to the residence of Penelope, he stops at an inn; where, in the middle of the night, he is alarmed by a shriek from an

adjacent chamber; which he immediately enters, just in time to rescue his mistress from the embraces of Mr. Buckle. Mr. Pawlet then arrives, and announces that Penelope is the illegitimate daughter of Mr. Buckle. Shortly afterward, Keppel comes to the same inn, in pursuit of Penelope; and, furiously irritated against Barclay by the lying malice of the Abbé, who had ascribed her elopement to him, in order to screen Buckle, he grossly reproaches Barclay, challenges him, and wounds him: but, being soon informed of the rectitude and honour of the hero's conduct, he is smitten with remorse. He now reveals the story of his birth; Barclay discovers that he is his lost brother; and Keppel resigns the beautiful Penelope to her faithful Ulysses.

The story introduces many more characters than our short sketch of it has yet noticed:—Gregory, the faithful and affectionate servant of Barclay, continually in scrapes from his inordinate attachment to the female sex:—Mrs. George Pawlet, her son, and her daughter, extravagantly fond of Italian music;—a *chère amie* of the Honourable Mr. Buckle, licentious, unreserved, but endowed with strong natural sense;—&c. We shall give two or three extracts, in justice to the author, and to afford grounds for judging of the reasonableness of our critical decisions: beginning with a sketch of the benevolent clergyman and his learned wife:

'No two people could be more opposite in their nature than the dean's daughter and young Pawlet, who was about thirty, the same age as herself. He was about the middle size, and rather inclined to be lusty; of a cheerful, ruddy countenance, in which you might plainly read the characters of benevolence and kindness. I speak of him as I am told he was then; as I know he is now.—A more tender-hearted creature never existed. Nothing can ruffle him but injustice, oppression, or want of charity. Without professing to be a philosopher, he is so much so as to think nothing in this world worth quarelling about. He is, in short, what St. Paul beautifully describes charity itself to be: He "suffers long, and is kind; envies not; boasts not of *himself;* is not puffed up; does not behave unseemly; seeks not his own; is not easily provoked; thinks no evil; rejoices not in iniquity, but rejoices in the truth; bears all things, believes all things, hopes all things, endures all things."

'Such was, and such is now at fifty, the man the dean chose for his daughter's husband. Lord Clarendon observes *, that "clergymen understand the least and take the worst measure of human affairs of all mankind that can read and write;" and my friend was a great instance of the veracity of this observation. Old Pawlet no sooner opened the affair, and stated how happy it would make him, than his son, without considering a thousand other things that should be considered on these occasions, instantly agreed to it.

'* In his Life.'

'The

'The period was not long before the indissoluble knot was tied, and Cupid tucked such a *pair* in bed that night as he had scarcely ever seen, although his mother * is of old notorious for bringing opposites together. Ovid has no metamorphose so strange, sudden, and absurd, as Mrs. Pawlet made in the parsonage-house. My worthy friend, with a meekness of temper far surpassing that of Socrates, bore it all without repining, and even assisted at making alterations, and agreed to the adoption of many plans, which he could not but disapprove. So that there was no murmuring and no complaint: he was happy and contented. He submitted, and still submits, to his wife in every thing but one—in acts of benevolence and charity he is insuperably obstinate, and will suffer no controul.

'The mildness of his manners produced some effect upon her, and he in his turn performed a metamorphose, making her a little more tolerable and reasonable than she was. There is yet, however, full enough of the old woman in her character. To tell all her whims and vagaries would be an endless task; however I shall notice a few.

'Having gone the whole round of sciences in a very cursory way, she talks of all, and exceedingly loves to be called a LIVING ENCYCLOPÆDIA. She is always reading or writing, let her be wherever she will. Takes snuff immoderately. Talks with precision. Never suffers any one to pronounce or use a word improperly. Always explains the figures she uses, and reasons logically, that is, tediously and foolishly. Has dipped in Euclid Is full of solids, angles, parallelograms, logarithms, &c. The same of geography. Never hears of a place but she tells you on which side of the equator it is, north or south, and in what latitude and longitude. In like manner of astronomy. Then there being no apothecary in the village, she has studied the whole *materia medica* for the benefit of the family. Can read a physician's prescription as well as an apothecary. She physics all the servants to such a degree, on the slightest indisposition, that, when they are really ill, they sham well for fear of being dosed.

'She has her own library, which is crowded with books of all descriptions, but principally in the dead languages. She prides herself on the correctness of a barometer she hangs out of the window, which, by the bye, is none of the best. However, if it indicates that the weather is fair, she will contend it is so, although it should rain in torrents. Often too, when people are sick, she will give them a thousand reasons why they should not be sick, and make a man's head ache ten times more than it did, in proving to him that there is no cause for its aching.

'They sleep together; and I verily believe that, unless it is when they do sleep together, that is, at the same time, Mr Pawlet gets but a small share of it. In the middle of the room, much against his inclination, she suspends a large, glaring lamp, which burns throughout the night. By the side of the bed are placed a table,

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* "With sportive cruelty she binds,
Unequal forms, unequal minds."
Hor. Carm. lib. i. od. 33.

pens,

pens, ink, and paper, and constantly in the dead of night, if a thought strikes her, she rises to put it down. And frequently she wakes the parson from his peaceful slumber, to ask him his opinion about passages he knows as little of as the man in the moon.'

In Vol. II. p. 27, a conversation at dinner between Mr. and Mrs. Pawlet is, we think, well imagined and related:

'It would be vain, and tedious, to relate all the subjects of controversy which were entered into, to please Mrs. Pawlet; I shall therefore omit several, and come to one, which, in the end, even ruffled the temper of the good-natured clergyman. It was this,—the parson contended for a *vacuum*, which always incensed his wife, who was a desperate stickler for a *plenum*.

"A Greek writer," said she, "calls substance τοδέν, *something*; and void, το μηδεν, *nothing*. Now, I am for the τοδέν; I am for something. I am with the Aristotelians; they say that nature abhors a *vacuum*,—so I do."

'However mild the disposition of a man may be, there is always a spark of ambition in his heart, which will shew itself, whenever it finds an opportunity. Mr. Pawlet suffered himself to be defeated, in many instances, to please the vanity of his wife; but having the best of the argument, in the present, and being allowed, without offence, to support it, he determined to display his powers before our hero. He, very properly, and justly insisted, that there could be no motion without a void, and went on, establishing his position with great firmness and truth.

'Mrs. Pawlet, on the other hand, arguing, with thundering volubility, from Hobbes and Descartes, so confounded and bewildered the subject, that the parson, unable to go any further, and displeased at not being able to convince her* that he was in the right, exclaimed, "Why will women meddle with philosophy?"

"And why not, pray?" cried Mrs. Pawlet; "what were women born for, then?"

"Why, according to St. Paul," said the parson, "*to marry, bear children, and guide the house.*"

"Granting this," replied Mrs. Pawlet, a little angrily, "I should be glad to learn, how knowledge is incompatible with her situation in life. I should like to be told, why chemistry, geography, algebra, languages, and the whole circle of arts and sciences, are not as becoming in her, as in a man."

"I do not say," rejoined the parson, "that they are entirely unbecoming, but, I think, a very little of them will serve her purpose. In my opinion, a woman's knowledge of chemistry should

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'* This is precisely my case. I am never angry in a controversy, when my opponent clearly explains my error. But when I have an idea of what is right, but cannot satisfy my antagonist, and he persists in the contest, presuming on my hesitation, and striking me, as it were, with reeds, because I cannot come at my arms, then I fret.

"That's an honest trait."

'Oh! trust me, I'll tell you nothing bad of myself.'

extend

extend no farther than to the melting of butter, her geography to a thorough acquaintance with every hole and corner in the house, her algebra to keeping a correct account of the expences of the family; and as for tongues, Heaven knows that one is enough in all conscience, and the less use she makes of that the better."

'During this speech, Mrs. Pawlet was much agitated; and scarcely able to conceal her anger, she said, "Ah! it is very well, Mr. Pawlet, but I smile at your impotency!"

"My dear," replied he, "you should rather be sorry for it."

"You are defeated," continued she, "and, in revenge, you descend to abuse. I have long found you deaf to instruction. You may be a man of some ordinary sense, and I believe you to possess the properties of *verity* and *bonity*, but I can say no more for you. I have endeavoured, by constant communication, and instruction, to augment your intellectual fund; but, alas! I find the truth of the scholastic axiom, *Whatever is received, is received according to the capacity of the recipient;* a gallon may pour out its liquor into a pint bottle, but the bottle can receive no more than a pint. I have done all that can be done, and may as well attempt to penetrate the rind of nature, and open a way to eternity, as to add to your knowledge."

'Here Mrs. Pawlet looked at Barclay, with strong symptoms of exultation; and the parson, thinking he had been too harsh, rose, and said, "Come, my dear, let us be friends again. You forced me to this opposition, and must not blame me for what I have advanced. Be composed. I'm sure you are in the right." Saying this, he gave her a kiss to atone for his fault; a luxury Barclay did not envy him.

"Well," said Mrs. Pawlet, rising, "now, I think it is time for me to retire, but do not imagine that I retire for the same reason that other women do, namely, to allow you a greater freedom of speech. No, truly; for I affirm, that there is nothing, however free, which a philosophical mind may not attend to. What are words, or things, to me? The philosopher's mistress is Truth, and she is naked."

'The parson and our hero looked at each other with a smile.

"Yes," continued she, "and wherever he meets her, he embraces her with rapture, for in her alone exists all that is divinely beautiful."

'Barclay sighed.

"You sigh, Mr. Temple," said she, "but I do not wonder at it, for I talk of your mistress."

"You do, you do, indeed!" cried Barclay, with a warmth that was very diversely understood by Mrs. Pawlet and himself; "she is, in truth divinely beautiful, but how difficult is it to acquire her!"

"Right," rejoined Mrs. Pawlet; "but to explain my motive for retiring. I hold it to be classically proper, and I gather that opinion from the following passage in Plutarch. He says, in his Banquet of the Seven Sages, that a wise man, Καν οινος η φαυλος επι τας νυμφας καταφυγειν *, *if he finds the wine bad, has recourse to the nymphs.* Some, I know, contend, that the word *nymphs* means water. But I rather

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' Xylander's edition of Plutarch's Var. Op. p. 90.

give

give it this interpretation. *If a wise man finds the wine bad, he retires to the* LADIES. It is of consequence admitted, that if he retires to the ladies, the ladies must have previously withdrawn; and, supported by this authority, I always deem it decent to retire." Uttering these words, she left the room, apparently in the highest degree satisfied with the display she had made of her talents and erudition.

' Being gone, Mr. Pawlet drew his chair closer to our hero's, and, inviting him to fill his glass, said he was heartily glad to see him, and drank to their better acquaintance. Barclay pledged him with great sincerity.

" You must think," continued Mr. Pawlet, falling back in his chair, " you must think my wife a very strange woman, from what you have seen and heard of her. Indeed, she is so. The learning her father, the dean, compelled her to obtain, has been too much for her. In a stronger head * it might have been of great service, but in hers it only tends to make her wild and eccentric. She is always doing some out-of-the-way thing; but, indeed, I believe she has a good heart, and would not, willingly, do any one harm."

" I cannot doubt it," replied Barclay.

" But still," said the parson, " she is often very near doing some, as, for instance, this morning,—and the other day, what do you think she did? The man who takes care of my horses was suddenly seized with a sickness, either through drinking more than he was aware of, when dry, or was deceived in the quality of the liquor he drank. How that was I cannot say, but Mrs. Pawlet soon heard from the gardener that he was in this condition. The gardener informed against his fellow-servant, because, I understand, they are not upon the best terms, and this is owing to a scheme of my wife's, which I confess I do not much approve. She tells me, that by creating feuds among the servants, she imitates Cato †, who, she says, wisely adopted this method, as a surety against their colluding together to cheat him. Well, the instant my dear knew that the groom was, to use the poet's phrase, for the sake of decency, " pouring his throat ‡" in the kitchen, she visited him, and presently hit upon this remedy. She had read, in Pliny, " That *wine, with pomegranate juice, stops vomiting* §." Procuring, therefore, a bottle of Madeira, and squeezing a little pomegranate juice into it, she presented it to him, glass after glass. The honest fellow took the prescription very kindly, until he had finished the bottle, which, as you may easily conceive, only made bad worse. Good soul! I am sure she meant well, but the poor man was, after all, obliged to be carried to bed in a deplorable state of intoxication and sickness."

' * The Arabian observation is, that whenever learning is introduced into a brain whose texture is not adapted to receive it, a fermentation ensues, till the whole is exhausted.

' Pref. Epist. to L. B. esq. p. 11.'

' † Plutarch's Life of Cato, the Censor.'

' ‡ " The attic warbler pours his dulcet throat."—POPE or GRAY.'

' § Vomitiones sistit cum succo granati.

PLINY, Nat. Hist. b. xx. c. 14.'

We

We had marked for insertion some additional humorous passages, descriptive of this learned lady: but perhaps our readers may wish to be introduced to others of the personages who figure in these volumes. We shall therefore present them with a few sketches of honest Gregory, the affectionate servant of Barclay Temple: who, at the period in which he is now to appear, is attending his master in chambers in London, just after the decease of Mr. Temple, senior.

'Our friend Gregory was now between forty and fifty; he was stout and rather short, his height not exceeding five feet. Of his face, I can only say, that, excepting a nose of no common promise, it had nothing to distinguish it from the vulgar herd of faces, innocent of all meaning. To describe him, in a word, he held the same rank among nature's works as hardware among the potters.

'Of the honesty of his mind and disposition too much cannot be said. His outside was rough like the shell of the cocoa nut, and like the cocoa, his heart contained abundance of sweet milk—the sweet milk of human kindness.

"Well but his vices, sir,—his swearing, and his fondness of—what, sir? What was he fond of?" For shame, ma'am, don't ask me that.

"You promised to tell, sir, and you know, that a woman's curiosity is——" As restless as St. Vitus's dance! therefore to give you ease, I will tell you. Now, O Goddess of Chastity! send, O send thy sylphs to influence my words and guide my pen! My invocation being at an end, be pleased, madam (for I swear I will not speak out loud), be pleased to lend me your ear—Pooh, that won't do—Do just move your wig a little on one side—there, that 'll do. Gregory, madam, was, what I still hope you are not, excessively fond of love! "Pshaw, is that all? And pray, sir, why should not I be fond of love?"

'Zounds, ma'am, he was as amorous as a goat!—"Poor fellow, well, I'm sure he's more to be pitied than blamed."

'Madam, I *honour* your feelings, but I shall not venture to remain in private with you any longer!'——

'As any figure with a bald head is, to a publican, the sign of the Marquis of Granby, so was any thing in a petticoat an angel in the eyes of Gregory. That being the case, he must undoubtedly have possessed much of the virtue of Shadrach, Meshach, and Abednego, to have lived in this great town so long as he did, without being entirely consumed.

'Though fortunate in many respects, he was not not always successful in his amours. Being sent one day by Barclay, with some trifling message, to Keppel's chambers, he found there a pretty little wench who had lately been hired. The moment he beheld her, he fell desperately in love. "In love?" you cry. Yes, in love, if South's definition of love be just. "It is," says he, "all the powers, vigour, and faculties of the soul, abridged into one inclination. The whole man wrapt up in one desire." Such was the case with Gregory. South then adds, "That the soul may sooner leave

off to subsist, than to love; and, like a vine, it withers and dies, if it has nothing to embrace." Gregory could never submit to that; he therefore began to embrace the nymph with true satiric warmth. Having previously inquired whether her master was at home, and learning that he was not, he shut the door, and without any further ceremony, as Helle was carried by the ram, he bore her into the bed-chamber. Here, madam, such a conflict ensued as you can have no idea of.

'Alas! poor Gregory, to attack thee in such a situation! Madam, she beat him with a brush, until he was obliged to cry for quarter. She then opened the door, and he was glad to sneak away disgraced and discomfited. Such, indeed, is commonly the end of most love affairs!

'But to use the words of a noble lord, "The gallant who goes about to open the trenches in this manner, will generally" (like Gregory) "be soon obliged to raise the siege *."

'Keppel's maid having never seen Gregory before, and he thinking it full as well, after what had happened, to retire without delivering his message, she could not identify the person who had been there, and, during his absence, committed such an alarming outrage on her virtue. However, as she had fought such a good fight, she was resolved not to lose all the advantage her reputation might derive from it; she therefore described every thing to her master on his return, as minutely as she was able. But she dwelt so much on her own *spotless virtue*, and gave such a confused account of the ravisher, that none but Keppel, who, knowing Gregory's propensity, shrewdly suspected it was him, could have gathered any thing from it.

'Telling Barclay the circumstance next day, without intimating his suspicions, our hero exclaimed, before he had half finished, "As I live, 'twas Gregory! the scoundrel!"

"I guessed as much," cried Keppel, "but we may be both wrong—I am to dine with you to day, let us devise some plan to sound him."

'This being agreed upon, at dinner, while Gregory was waiting, Barclay said in a careless manner, "Did you go to my friend's with that message yesterday, Gregory?"

"Message?" he replied, in a way as if he had forgotten it.

"Yes," added the other, "the message that I told you to deliver in the course of the evening."

"Ay," cried Gregory, not wishing to tell a lie, and catching at the word *deliver*, "I recollect now—no sir, I did not deliver it."

'Keppel seeing they were baffled here, went on thus, addressing himself to Barclay.

"Apropos of yesterday—The strangest thing happened whilst I was out, that you ever heard. A man, I know not who, called at my chambers, and being told that I was not at home, he rushed in, and ravished my maid servant."

'Gregory kept rubbing the glasses, as if he meant to rub them to pieces.

'* Lord Mulgrave, on the bill to prevent the intermarriage of the parties concerned. April, 1800.'

"Bless

" Bless me," cried Barclay, with affected surprise, " pray, what time of the day was it?"

" Some time in the evening," replied the other.

" Well," said our hero, looking stedfastly at Gregory, whose confusion evidently betrayed his guilt, " I am glad, *sir*, to understand that you were not there last night."

' When we say *sir*, to a gentleman, we mean to employ an honourable term; but, when we apply it to a servant, as—" So, sir," or as it is used above, it is merely an abbreviation of *sir-rah*. Gregory felt the full force of the word, and knew his master's suspicions; but not caring to acknowledge the fact, he bowed respectfully to conceal his blushes, and then turned round as if he had something to do at the sideboard.

' Keppel had made a little embellishment, but finding that of no effect, proceeded to magnify still further.

" Now," said he to Barclay, " I would have forgiven the fellow for any thing that he did with the girl, since his passions might have run away with him, but I can never pardon his descending to steal the silver candlestick."

" If I did, I'll be d—d!" cried Gregory, turning hastily round; " as I hope for mercy, I stole nothing!"

' Keppel and Barclay could not refrain from bursting out into a fit of laughter, during which, Gregory, conscious how his indignation at being accused of theft had betrayed him, ran out of the room.'

Such are some of the parts of a work, which with us has cheered the toil and smoothed the brow of criticism. It is not, however, without its faults:—its sprightliness sometimes borders on boyish playfulness and aukward gaiety; the display of learning may occasionally appear as the pomp of pedantry; and the chaste rules of decorum are not unfrequently transgressed, though the author seldom excites passion by luxurious description, and never wantonly offends by obtrusive obscenity. " *Take it for all in all, we* do not often *look upon its like*," in this department of literature; and we hope that the commendation, which we freely bestow on the author, will stimulate him to a salutary examination and a vigorous exertion of the talents with which he is endowed.

G. 2.

R. Wood.

ART. XI. *Philosophical Transactions of the Royal Society of London*, for the Year 1800. Part III. 4to. 17s. Boards. Elmsly.

THIS concluding part of the Transactions of the Royal Society, for the last year, is occupied by only two papers: but each of them is very long, the two together forming a volume of 300 pages. The first is intitled

Experiments on the Solar and on the Terrestrial Rays that occasion Heat; with a Comparative View of the Laws to which Light

and Heat, or rather the Rays which occasion them, are subject, in order to determine whether they are the same, or different. Part II. By William Herschel, LL. D. F. R. S.——In p. 393 of our Review for April last, we gave an account of Dr. Herschel's experiments and reasonings relative to what he views as a new discovery in natural philosophy. The inference deduced in his former paper amounts to this; that, in all cases of heat, whether derived from the sun or from candent terrestrial substances, there are rays which cause the heat independently of light, and which are subject to certain laws of refraction and reflection. The same subject is pursued at great length in this second part of his memoir, and the investigation is not yet at an end; the special object of the paper before us being only to point out certain striking differences between the rays which cause light, and those which produce heat, preparatory to the discussion of the question,—"Are light and heat caused by the same or by different rays?"

The first section in the present paper treats on the *Different Refrangibility of the Rays of Heat.*—Having noticed the similarity between the rays which cause light and those which cause heat, Dr. H. points out a remarkable difference, consisting in this; that, when rays are dispersed by a prism, those which occasion illumination, and the heat-making rays, neither agree in their mean refrangibility nor in the situation of their maxima. This position is illustrated by a figure consisting of two curves, of which the respective ordinates are drawn proportional to the powers of the rays to cause illumination and heat.

The 21*st Experiment* is intended to prove that *the Sines of Refraction of the heat-making Rays are in a constant Ratio to the Sines of Incidence:* but the inference made by Dr. H., at the conclusion, we either do not understand, or, if we understand it, we cannot assent to it.

Experiment 22. *Correction of the different Refrangibility of Heat, by contrary Refraction in different Mediums.*—As this is a curious experiment, the account of it deserves to be quoted:

'I took three prisms; one of crown glass, having an angle of 25 degrees; another of flint glass, with an angle of 24; and a third of crown glass, with an angle of 10 degrees. These being put together, as they are placed when experiments of achromatic refractions are to be made, I found that they gave a spectrum nearly without colour. The composition seemed to be rather a little over adjusted; there being a very faint tinge of red on the most refracted side, and of violet on the least refracted margin. I examined both extremes by two thermometers; keeping No. 3 as a standard, while No. 2 was applied for the discovery of invisible rays; but I found no heat on either side. After this, I placed No. 2 in the middle of the colourless illumination; and in a little time it rose two degrees, while

No. 3

No. 3 still remained unaltered at some small distance from the spectrum. This quantity was full as much as I could expect, considering the heat that must have been intercepted by three prisms. Thus then it appears, that the different refrangibility of heat, as well as that of light, admits of prismatic correction. And we may add, that this experiment also tends to the establishment of the contents of the preceding one; for the refrangibility of heat rays could not be thus corrected, were the sines of refraction not in a constant ratio to those of incidence.'

24*th Experiment. In Burning-Glasses, the Focus of the Rays of Heat is different from the Focus of the Rays of Light.*—From this experiment, it appears that the focus of heat is farther removed from the speculum than the focus of illumination.

Section V. *Transmission of heat-making Rays.*—Here commences the investigation of the transmission of heat through diaphonous substances. After a description of the machinery invented for this transmission, Dr. Herschel proceeds to treat of *the Transmission of Heat through colourless Substances*, and gives the results of sixty experiments made with various kinds of transparent bodies. Part of the transparent substance was placed over a hole, directly under which was the bulb of a thermometer; while the bulb of another thermometer was placed parallel to that of the former, in such a manner that the unobstructed rays of the sun, and the transmitted rays, fell precisely in the same manner on the bulbs of the two thermometers;—the action of the light and heat was made to last five minutes.

After having enumerated the experiments made with the sun, Dr. Herschel describes the machinery invented by him for *transmitting Flame-Heat*, and states the results of the experiments performed with this view.—In page 476, we have the description of machinery for *transmitting Fire-Heat;* and subjoined are experiments made with various substances. Concerning *the Transmission of invisible terrestrial Heat*, the Dr. says:

'This is perhaps the most extensive and most interesting of all the articles we have to investigate. Dark heat is with us the most common of all; and its passage from one body into another, is what it highly concerns us to trace out. The slightest change of temperature denotes the motion of invisible heat; and if we could be fully informed about the method of its transmission, much light would be thrown on what now still remains a mysterious subject. It must be remembered, that in the following experiments, I only mean to point out the transmission of such dark heat as I have before proved to consist of rays, without inquiring whether there be any other than such existing.'

He then proceeds to describe his apparatus, which would not be readily comprehended without the plate.

Sect. VI. *On the scattering of Solar Heat;*—a branch of inquiry, Dr. H. says, which deserves a fuller investigation than he has given. This scattering of heat he attributes to the reflection of it from the rough surfaces of bodies, and consequently it takes place in all bodies. In order to compare the effect of rough surfaces on heat with their effect on light, he made a variety of experiments, and here describes the apparatus with which they were performed:

'From these experiments (he says) it seems to be evident, that in scattering heat, the colour of the object is out of the question; or, at least, that it is no otherwise concerned than as far as it may influence the texture of the surface of bodies. For here we find that pale-green, which is brighter, or scatters more light, than dark-green, yet scatters less heat. Even black, so generally known to scatter but little light, scatters much heat. But, in order to put this surmise to a fairer trial, I made the following experiments with my new machine.'

By subsequent experiments, he arrived at this result; that colour has no concern in the laws relating to the scattering of heat.

Sect. VII. *Whether Light and Heat be occasioned by the same or by different Rays.*—Previously to the close discussion of this question, Dr. H. says that he may strictly infer from foregoing experiments, that there are rays of heat both solar and terrestrial, not endowed with a power of rendering objects visible.

'It has also been proved, (he remarks,) by the whole tenour of our prismatic experiments, that this invisible heat is continued, from the beginning of the least refrangible rays towards the most refrangible ones, in a series of uninterrupted gradation, from a gentle beginning to a certain maximum; and that it afterwards declines, as uniformly, to a vanishing state. These phenomena have been ascertained by an instrument, which, figuratively speaking, we may call blind, and which, therefore, could give us no information about light: yet, by its faithful report, the thermometer, which is the instrument alluded to, can leave no doubt about the existence of the different degrees of heat in the prismatic spectrum.

'This consideration, as has been observed, must alter the form of our proposed inquiry; for the question being thus at least partly decided, since it is ascertained that we have rays of heat which give no light, it can only become a subject of inquiry, whether some of these heat-making rays may not have a power of rendering objects visible, superadded to their now already established power of heating bodies.

'This being the case, it is evident that the *onus probandi* ought to lie with those who are willing to establish such an hypothesis; for it does not appear that nature is in the habit of using one and the same mechanism with any two of our senses; witness the vibrations of air that make sound; the effluvia that occasion smells; the particles

particles that produce taste; the resistance or repulsive powers that effect the touch: all these are evidently suited to their respective organs of sense. Are we then here, on the contrary, to suppose that the same mechanism should be the cause of such different sensations, as the delicate perceptions of vision, and the very grossest of all affections, which are common to the coarsest parts of our bodies, when exposed to heat?

'But, let us see what light may now be obtained from the several articles that have been discussed in this paper. It has been shewn, that the effect of heat and of illumination may be represented by the two united spectra, which we have given *. Now, when these are compared, it appears that those who would have the rays of heat also to do the office of light, must be obliged to maintain the following arbitrary and revolting positions; namely, that a set of rays conveying heat, should all at once, in a certain part of the spectrum, begin to give a small degree of light; that this newly acquired power of illumination should increase, while the power of heating is on the decline; that when the illuminating principle is come to a maximum, it should, in its turn, also decline very rapidly, and vanish at the same time with the power of heating. How can effects that are so opposite be ascribed to the same cause? first of all, heat without light; next to this, decreasing heat, but increasing light; then again, decreasing heat and decreasing light. What modification can we suppose to be superadded to the heat-making power, that will produce such inconsistent results?

'We must not omit to mention another difference between light and heat, which may be gathered from the same article of the refrangibility of heat-making rays. It is, that though light and heat are both refrangible, the ratio of the sines of incidence and refraction of the mean rays is not the same in both. Heat is evidently less refrangible than light; whether we take a mean refrangible ray of each, or, which I believe to be the better way of proceeding, whether we take the maximum of heat and light separately. This appears, not only from the view we have taken of the two spectra already mentioned, but more evidently from the 23d experiment, by which we find, that heat cannot be collected by a lens, to the same focus where light is gathered together.'

A preceding section, No. V., affords the author ample means of pointing out a striking difference between the two principles of heat and light.—The quantities of light and heat intercepted by colourless substances are represented in the subjoined table:

'TABLE I.

Bluish-white glass stops	250 rays of heat, and	86 of light.
White flint glass	91	34
Greenish crown glass	259	203
Coach glass	214	168
Iceland crystal	244	150
Talc	139	90
Calcinable talc	184	288

'* See page 439, and Plate XX.'

From the inspection of this table, it appears that no sort of regularity takes place between the two kinds of rays stopped; so that light and heat seem to be entirely unconnected. To the first table, which we have given, Dr. H. adds three others relating to the transmission of the rays of heat and light through different substances. He then particularly examines these tables, in order to ascertain whether light and heat can be occasioned by the same rays or not; and he thinks that the determination of the question will be obtained, if it be shewn that the stopping of one sort of rays does not necessarily stop the other. Now it appears (he observes) from his tables, that bluish white and flint glasses stop nearly as much heat as light; whereas crown glass stops one-fourth more of the former than of the latter;—and by another experiment, we learn that the former glasses transmit nearly all the invisible rays of solar heat, whereas crown glass stops a considerable number of them. The most forcible arguments in favour of the separation of the two principles, the Doctor thinks, may be drawn from the second table: since a dark red glass, it there appears, stops 606 rays of heat, and 999.8 of light. Now,

'As only one ray in 5000 can make its way through this glass, it is evident, that if the rays of light be also those of heat, there can hardly come any heat through it but what must be occasioned by rays that are invisible. It will therefore become a question to be examined, how many of this sort we can admit, if we proceed on a supposition that heat consists of light, as far as that will go. Now this, we find, has already been ascertained, in a great measure, by our 13th, 17th, and 18th experiments. In the 13th, one hundred and twenty degrees of heat were given to a thermometer, in one minute, by the rays which accompany the colonred part of the spectrum. In the 17th experiment, on the contrary, we find only 45 degrees of heat communicated to the same thermometer, in the same time, by the invisible rays of the same spectrum. If we would be more scrupulous, the 18th experiment limits the heat from rays totally invisible even to 21 degrees; but, in order to make every possible aliowance, let the proportion be the most favourable one of 120 to 45, which, reduced to mean rays of heat, will give 727 of them visible, and 273 invisible, to make up our thousand.

'To return to the experiment: if the total number of rays of heat ascribed to light should accordingly be rated at 727, it is evident, from the stoppage of light of this glass, that 726 rays of heat at least must also be intercepted: and, in consequence of the 153d experiment, which shews that our glass opposes no obstruction to any of the invisible rays, we shall require no more. But, by our present experiment, this glass stops only 606 rays of heat; so that 120 of them will remain unaccounted for. Now, the moment we give up the hypothesis that heat is occasioned by the rays of light, the difficulty becomes fully resolved by our 100th experiment, which shews that full three-tenths of the rays that have the refrangibility of the red are actually transmitted.'

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In order to try the force of his arguments, Dr. H. states 'all possible objections' against his own opinion. He examines several hypotheses, by which the rays of light are admitted to be the same as those of heat; and he shews that in all such hypotheses, there must be some deficiency of explanation: whence it is to be concluded that *visible* rays of heat cannot be admitted in any proportion whatever.

Table V. p. 520. Here Dr. H. takes into consideration a more direct proof than any which can be drawn from the prismatic experiments. He observes that, since there is heat of the same variety in refrangibility as the different colours, the question may be reduced to this point: "Is the heat, which has the refrangibility of red rays, occasioned by the light of these rays?" He then says that want of room and leisure obliges him to anticipate a series of 'highly interesting observations' which he has made, but which he cannot now detail; whence this fact is established, that red glass does not stop red rays: whereas it appears that, in regard to heat, red glass stops 692 out of 1000.

'Here then we have a direct and simple proof, in the case of the red glass, that the rays of light are transmitted, while those of heat are stopped, and that thus they have nothing in common but a certain equal degree of refrangibility, which, by the power of the glass, must occasion them to be thrown together into the place which is pointed out to us by the visibility of the rays of light.

'The manifest use of the union of these rays, arising from their equal refrangibility, will be explained at a future opportunity, when I may perhaps throw out several hints that have already occurred to me, where the contents of this paper may be applied to the useful purposes of life.

'There still remains a general argument, that heat and light are occasioned by different rays, which ought not to be omitted. This, on account of the contracted state in which the experiments have been given, cannot appear from my paper; but, by an inspection of them at full length, it is proved, that the stoppage of solar heat, setting aside little irregularities, to which all observations are liable, has constantly been greater in the first, second, or third minute, than in the fourth and fifth; or, more accurately, nearer the beginning of the five minutes, than about the end of them. Now this does not happen in the transmission of light, which, as far as we know, is instantaneous; at least a failure in the brightness of an object, when first we look at it through a glass, amounting to one, two, or even three minutes, could not possibly have escaped our observation. This seems to suggest to us, that the law by which heat is transmitted, is different from that which directs the passage of light; and, in that case, it must become an irrefragable argument of the difference of the rays which occasion them.'

From experiments made concerning the transmission of rays with glasses having one side rough, or covered with emery, it

is

is inferred that the phænomena cannot be explained, except on this hypothesis; that the rays of light and heat are essentially or in their nature different.

Dr. H. next proceeds to a review of the phænomena attending *the Transmission of terrestrial Heat;* and for this purpose he has constructed a table which succinctly states the results of many experiments. The first point established is the existence of terrestrial heat in the flame of a candle; *i. e.* that there is an issuing heat not caused by visible rays.

We now come to a *Table of the Transmission of terrestrial scattered Light through various Substances: with a short Account of the Method by which the Results contained in this Table have been obtained.*—This account comprehends the description of the machinery invented by the author, and founded on the principles admitted by M. *Bouguer* in his Treatise on Optics: but the machinery cannot be adequately described without the engravings.

Dr. Herschel proposes to prosecute his researches; and their results are to be published in a future number of the Transactions.

The second paper in this volume is

An Account of the Trigonometrical Survey, carried on in the Years 1797, 1798, and 1799, *by Order of Marquis Cornwallis, Master General of the Ordnance.* By Captain William Mudge, of the Royal Artillery, F.R.S.——For the general object of this paper, and its arrangement, we quote the author's own words:

'The contents of the work now meeting the public eye, are important and numerous: I have divided it into sections. The first contains the calculations of the sides of the principal and secondary triangles extended over the country in 1797, 1798, and 1799; together with an account of the measurement of a new base line on Sedgemoor, and a short historical narrative of each year's operation. The second section contains the computed latitudes and longitudes of those places, on the western coast, intersected in 1795 and 1796, and also such others, since determined, as lie conveniently situated to the newly-observed meridians. This section also contains the directions of those meridians; one on Black Down, in Dorsetshire; another on Butterton Hill, in Devonshire; and another on St. Agnes Beacon, in Cornwall. Among the contents are likewise to be numbered the bearings, distances, &c. of the stations and intersected objects, from the parallels and meridians.

'The third and last section contains the triangles which have been carried over Essex, the western part of Kent, and portions of the counties joining the former, Suffolk and Hertfordshire. It is with satisfaction I am enabled to state, that Mr. Gardner, the chief draftsman, with his assistants, has almost completed the survey of this extensive tract, which, no doubt, like the map of Kent, will be given

to

to the public: the materials for these different surveys are ample, and will be found in this section, which concludes with the altitudes of the stations and mean refractions.'

The original associate of Captain Mudge was Mr. Isaac Dalby; who, we now learn, has been obliged to abandon his share in it, by the fatigues incident to the undertaking: his place is supplied by Mr. Simon Woolcot.

Section 1st contains *Particulars relative to the Operations of* 1797. Capt. Mudge gives a brief account of the places chosen for stations, and examined by the instrument; and he observes that the principal object, proposed to be accomplished in this year, was the determination of meridians at proper stations, in order to afford the necessary data for ascertaining the latitudes and longitudes of places intersected in the surveys of 1795 and 1796.

After the operations on Salisbury plain, Capt. Mudge had caused inquiry to be made for a spot on which a third base might be measured. With little prospect of success, he and Mr. Dalby passed over into South Wales, to examine the level between the new Passage House and Cardigan: but they soon abandoned all hope of finding a base right line of sufficient length, under circumstances fit to be measured; and therefore they sought for a place whence two right lines, including an angle, might be drawn and measured; of such a length, and so inclined, that the third side of the triangle might be five miles in length. This search, however, was also fruitless; and necessity then compelled them to direct their thoughts towards the measurement of a base on King's Sedgemoor.

II. *Account of Angles taken in the year* 1797.

III. *Particulars relating to the Operations of the year* 1798.—In the beginning of 1798, the first operation performed was the trigonometrical survey of the counties adjacent to the northern and southern shores of the Thames in Kent, and afterward in Essex. The chief draftsmen and surveyors belonging to the drawing room in the Tower attended, since it was for their immediate service that the survey was there renewed;—the Master General wishing to have ample materials for the map of those parts.

After having stated what were the first operations in this year, Captain M. proceeds to the description of the measurement of a base at King's Sedgemoor. This measurement was attended with considerable difficulties, on account of several intersecting ditches, by which various allotments of land, conformably to an act of inclosure passed about that time, were set off. The surveyors were furnished, on this occasion, with a new chain 50 feet in length, made by Mr. Ramsden.—Among other

other particulars mentioned, is one descriptive of the method adopted for measuring an off-set; which operation it became necessary to perform, in consequence of the direct line of the intended measurement having been crossed by a ditch dug in consequence of the Inclosure Bill.—The operations of 1798 terminated in a diligent search for some spot in Cornwall, on which it might be possible to measure a base line of 2 or 3 miles in length: but unfortunately this search also was unsuccessful.

IV. *Angles taken in the year* 1798.

V. *Particulars relative to the Operations of* 1799.—In order to carry on these operations on a large scale, an excellent theodolite belonging to the Royal Society was borrowed by Captain Mudge.

VI. *Angles taken in the year* 1799.

VII. *Situation of the Stations.*

VIII. *Particulars relating to the Base on King's Sedgemoor; and the Reduction of that Base.*

IX. *Table of the Measurement of the Base of Verification on King's Sedgemoor.*

X. *Reduction of the Base.*

XI. *Calculation of the Sides of certain principal Triangles in Cornwall and Devonshire.*

XII. *Calculation of the Side of a Set of principal Triangles, carried on from the Side which joins the Stations on Beacon Hill, near Amesbury, and Wingreen Hill near Shaftsbury, towards the Base of Verification on King's Sedgemoor.*

XIII. *Calculation of the Sides of certain principal Triangles, carried on from the Side of Bagshot Heath and Highclere, towards the North.*

XIV. *Triangles for connecting the Series carried on from Scutchamfly Barrow and White Horse Hill, in Berkshire, into Buckinghamshire and Bedfordshire, with the Series carried on for the Survey of Essex.*

XV. *Triangles formed by the Intersections of Churches, Windmills, and other Objects.*

Section II. *Determination of the Latitudes and Longitudes of the Stations on Black Down, in Dorsetshire, Butterton, in Devonshire, and St. Agnes Beacon, Cornwall.*

XVI. *Calculation of the Distance between Black Down and Dunnose in the Isle of Wight.*

XVII. *Latitude and Longitude of Black Down.*

XVIII. *Calculation of the distance between the Stations on Black Down, in Dorsetshire, and Rippin Tor, in Devonshire.*

XIX. *Latitude and Longitude of Rippin Tor.*

XX. *Calculation of distance between Hensbarrow and Butterton.*

XXI. *Lati-*

XXI. *Latitude and Longitude of Hensbarrow.*

XXII. *Division of the Meridian at St. Agnes Beacon.*

XXIII. *Latitude and Longitude of St. Agnes Beacon.*

XXIV. *Remarks.*—In this Article, we find many learned, sagacious, and useful observations: but we have not the time and space requisite to dwell on them.

XXV. *Bearings of the Stations in the Series of* 1795 *and* 1796, *from the Parallels to the Meridians of Black Down, Butterton Hill, and St. Agnes Beacon: likewise their distances from those Meridians, and from their Perpendiculars.*

XXVI. *Latitudes and Longitudes of the Stations in the Series of* 1795 *and* 1796.

XXVII. *Bearings of the intersected Objects from the Stations in the Series of* 1795 *and* 1796, *from the Parallels to the Meridians of Black Down, Butterton Hill, and St. Agnes Beacon; and likewise their distance from these Meridians.*

XXVIII. *Latitudes and Longitudes of such intersected Objects, in the Series of* 1795 *and* 1796, *as have been referred to the Meridians of Black Down, Butterton Hill, and St. Agnes.*

XXIX. *Bearings of the Stations in the Series of* 1797 *and* 1798, *from the Parallels to the Meridians of Black Down, Butterton Hill, and St. Agnes Beacon; and likewise their distances from those Meridians.*

XXX. *Bearings of the Stations in the Series of* 1799, *from the Parallels to the Meridians of Dunnose and Greenwich; and likewise their distance from those Meridians.*

XXXI. *Latitudes and Longitudes of the Stations in the Series of* 1797 *and* 1798, *referred to the Meridians of Black Down, Butterton Hill, and St. Agnes Beacon.*

XXXII. *Latitudes and Longitudes of the Stations in the Series of* 1799, *referred to the Meridians of Dunnose and Greenwich.*

XXXIII. *Bearings of intersected Objects, from the Stations in the Series of* 1797 *and* 1798, *from the Parallels to the Meridians of Black Down, Butterton Hill, and St. Agnes Beacon; and likewise their distances from those Meridians.*

XXXIV. *Bearings of intersected Objects, from the Stations in the Series of* 1799, *from the Parallels to the Meridians of Dunnose and Greenwich; and likewise their distances from those Meridians.*

XXXV. *Latitudes and Longitudes of such Places, in the Series of* 1797 *and* 1798, *as have been referred to the Meridians of Black Down, Butterton Hill, and St. Agnes Beacon.*

XXXVI. *Latitudes and Longitudes of such Places in the Series of* 1799; *as have been referred to the Meridians of Dunnose and Greenwich.*

XXXVII. *Lati-*

XXXVII. *Latitudes and Longitudes of some remarkable Places, not contained in the preceding Tables.*

Section III. Contains *Trigonometrical Surveys of the Northern and Western Parts of Kent, the County of Essex, and Parts of the adjoining Counties of Suffolk and Hertford, executed in the years* 1798 *and* 1799.

XXXVIII. Contains *Principal Triangles;*—and XXXIX the *Secondary Triangles.*

XL. *Principal Triangles for the Survey of the Western Part of Kent.*—XLI. *Secondary Triangles.*

Section IV. *Determination of the Altitudes of the Stations above the Level of the Sea; and the mean Refractions deduced from observed Angles of Elevation and Depression.*

XLII. *Account of the Elevations and Depressions.*

XLIII. *Height of the Stations.*

XLIV. *Mean terrestrial Refractions.*

XLV. *Particulars respecting the Altitudes of the Stations.*

XLVI. *Matters relating to Refraction.*

We have thus given what will certainly appear a dry table of the contents of this paper: but we could not afford our readers a satisfactory idea of its extent, labour, and multiplicity of objects, in so short a compass by any other mode.

From the consideration of the refractions mentioned in this and the preceding account, it appears that the bending of rays from their rectilinear course, when such rays are horizontal, and at a considerable distance above the surface of the earth, is much less than theory and opinion state it to be. In a note to this article, Captain Mudge mentions a curious instance of atmospherical refraction.

The whole of this long and detailed account is furnished with Maps; and although there are few persons to whom the labours of Captain Mudge, and the relation of them, will be interesting, yet his undertaking, considered as a national concern, is important, and therefore intitled to attention. The measurements, also, appear to have been conducted with the greatest judgment and nicety; and besides the accomplishment of their express purpose, they may probably in their indirect influence benefit philosophy.

The 1st part of these Transactions for the present year has appeared; and we shall pay our respects to it at the earliest opportunity. We understand that there will be only *two* parts for 1801; and that the second is already in forwardness.

R. Wood.

ART. XII. *Political Essays on popular Subjects;* containing Dissertations on First Principles, Liberty, Democracy, and the Party Denominations of Whig and Tory. 8vo. 3s. Chapple. 1801.

THERE have been periods in which it was the fashion to regard Liberty with an ardent and uncontrouled enthusiasm; and there are others in which it is equally the fashion to approach her with suspicion and timidity. There have been writers, also, so enamoured of her, that she inspired them, when discussing her charms, even to poetic flights; and there are others who see, or think that they see, more evils than benefits in her train; and who, under the pretext of securing her from being abused, inculcate doctrines which are destructive of her very essence. Men of this latter stamp deem themselves justified by the atrocities of the French Revolution; and much genius and dexterity of argument are employed to diminish our love of Freedom, and to persuade us that it has been built on visionary principles. According to the author of the Essays before us, the doctrines maintained by Lord Somers at the Revolution, and by all the popular writers of the last age, are erroneous and mischievous. Liberty, in his hypothesis, does not emanate from the will of the people, 'it looks up to Government as its author:' whence it follows that, if a Government does not will a people to be free, they have no right to be free;—and, as he farther asserts that '*restraint* is the first and most essential quality of Government, the right of which it is absurd to suppose to be dependant on the will of the people,' there is not much reason for expecting that, under these circumstances, any great portion of so intoxicating and dangerous an enjoyment as Freedom will be indulged to them, with his consent.

It is amusing to observe with what a string of political axioms this writer prepares us for his conclusions: viz. 'Government must be incompatible with the possesion of *abstract* liberty.'—'*Absolute* freedom is self destructive.'—'Freedom and restraint are not always inconsistent with each other.'—'*Freedom* is one of the essential qualities of Government.'—Since Government has acquired unusual strength, and exerts it in wholesome restraints, 'tyranny has dwindled into a shadow.' Hence it should seem, also, that true liberty can only be received as a boon from our governors. Why, then, alas! did not our ancestors obtain it from the liberty-bestowing hand of James II.? How important is it for us to acquire correct notions of the genuine source of liberty;—which even here is allowed, when properly understood, to be a very good thing! 'It gives (says the author) zest to

life, vigour to occupation, scope to genius, and eminence to merit.'

The absurdity of democracy is thus logically proved:—'If the generality of mankind require to be governed, it is obvious from that very necessity, that they are not qualified to be governors; or if they are qualified to be governors, they do not require to be governed.' As logic, however, is a sword with two edges, and will cut both ways, let us see how the argument will stand when reversed. "If those who are qualified for governors do not require to be governed, all who evince a capacity for government ought to be exempted from its restraints." If this, however, be not allowed, and it be maintained that the wise as well as the ignorant stand in need of control, how can it follow, as a necessary consequence, that those who require to be governed are not qualified to be governors?

Numerous syllogisms are here constructed, to prove what no one is inclined to dispute, viz. the impracticability of pure democracy;—while lame and reluctant concessions are made in favour of liberty.

It is, indeed, graciously conceded that 'the happiness of a people ought to be the sole object of established authority,' and that a popular assembly (as in the British Constitution) may be admitted as an occasional restraint: but then we are reminded that the *true doctrine* is, 'that power originates from the throne,' and that the popular assembly 'is useful and lawful only as it acts in a subordinate sphere.'—The author adds, 'it is therefore that the friends of order and peace, look with horror and indignation on *all* attempts to add a novel influence to the democratical part of our constitution';—'for democracy is more to be dreaded than the overweening power of an aristocracy, or even the unlimited dominion of a king.' Particular reasons for this superior danger are assigned; the first of which is that democracy 'is *intimately* and *immediately* connected with the spirit of infidelity.' What would the democratic states of Switzerland and America say to this position?

A comparison is also instituted between absolute monarchy and democracy: in which the former is placed in the best and the latter in the worst point of view; (p. 89, &c.) and in which the one is represented as a copy of the government of heaven, the other as directly opposite to the system of divine administration, and 'as a successful rebellion against necessary authority.'—This is not 'comparing extremes;' which the author professes to be his intention.

The essay on Whigs and Tories contains an ingenious and animated vindication of the tenets of the latter, (not, how-

ever, it is added, 'in their greatest latitude,') and a condemnation of those of the former. The Whig Club is thus described: 'A Club of British Senators, occasionally blended, it is to be feared, with all the licentious spirits of the age, still exists in the heart of the metropolis, under this appellation; and frequent libations are poured out, by its enthusiastic members, before the idol of liberty.' P. 104.

The whole of this work may be considered as an artful panegyric on absolute Monarchy; in which, under the semblance of balancing different opinions, one scale is always made to preponderate. While it is mercifully allowed 'that Government ought ever to consult the happiness of the people, and that for this purpose it exists,' we are reminded that 'this *happiness* is not to be considered as synonimous with liberty; for, though liberty in a limited degree is one of the means of happiness, general restraint is necessary to the enjoyment of freedom;'—and the result of the whole is that nations may expect to be happy if they will regard every good as a donation of government: but that disorder and misery must ensue from their claiming the right, and exercising the function, of taking care of themselves.

Mo-y.

ART. XIII. *Medical Inquiries and Observations:* containing an Account of the Yellow Fever, as it appeared in Philadelphia in 1797, and Observations on the Nature and Cure of the Gout and Hydrophobia. By Benjamin Rush, M. D. Professor of Medicine in the University of Pennsylvania. Vol. V. 8vo. pp. 236. Printed at Philadelphia, and imported by Mawman, London. Price 5s. Boards.

WE have read this volume with that attention which is due to the author's character, and to the importance of the subjects on which he has treated: but, while we confess our obligations to him for the facts here collected, we must use the freedom of dissenting from some of his opinions. The controversy respecting the yellow fever has been maintained with a degree of virulence, which every friend of science and humanity must deplore; and though we find nothing of this unbecoming spirit in Dr. Rush's publication, we apprehend that he has been piqued into a defence of some very questionable points, by the opposition which his doctrines had encountered. When personal considerations are intermixed with general dicussions, the interests of Science must unavoidably suffer; and the most candid men become unconsciously biassed in their views, when their reputation and fortune are staked on the success of an experiment, or the popularity of an hypothesis. We there-

fore make great allowances for the solicitude of Dr. Rush, to prove that the contagious fever of Philadelphia arose from heaps of *putrid coffee*, or of potatoes, prunes, almonds, &c. but we cannot, consistently with our duty, suffer opinions so destitute of solidity, and so mischievous in the consequences deducible from them, to pass our tribunal unnoticed and unnoposed.

Dr. Rush first endeavours to establish the unity of fever, and to shew the impropriety of nosological distinctions, by a recital of the various forms under which this epidemic appeared.

'Most of the cases of bilious fever which came under my notice, were attended with quotidian, tertian or quartan intermissions. In a few of my patients there was an universal rash.

'Dr. Woodhouse informed me, that he had seen several instances in which the yellow fever had been taken from some soldiers who had laboured under the dysentery. These facts shew the unity of fever, and the impracticability of a nosological arrangement of diseases.'

These facts certainly do not warrant so extensive a conclusion. The remissions of a disease may be rendered irregular, or may be postponed, by the large evacuations which the author employed:—the eruption is an accident which attends all forms of fevers, in certain seasons, without altering their essence; and Dr. W.'s assertion is too loosely stated, to be received without allowance in a matter of so much importance. We are no advocates for implicit faith in nosological arrangement; it has hitherto been arbitrary and artificial; and the utility of the best nosological works has been chiefly felt by students, as books of reference. We may hope, however, that a natural arrangement of diseases may yet be accomplished; and when that great object shall be attained, there will be no occasion for disputing concerning its benefits.

After having described the cases of the first persons attacked by the yellow fever, in 1797, Dr. Rush adds;

'Attempts were made to trace it to importation, but a little investigation soon proved that it was derived from the foul air of a ship which had just arrived from Marseilles, and which discharged her cargo at Pine-street wharf, near the stores occupied by Mr. Lewis and Mr. Hall. Many other persons about the same time were affected with the fever from the same cause, in Water and Penn streets. About the middle of the month, a ship from Hamburgh communicated the disease, by means of her foul air, to the village of Kensington. It prevailed moreover in many instances in the suburbs, and in Kensington from putrid exhalations from gutters and marshy grounds, at a distance from the Delaware, and from the foul ships which have been mentioned. Proofs of the truth of each of these assertions shall be given in their proper place.'

In all disputes, much depends on a proper comprehension of the terms. In this passage, Dr. Rush denies that the disease

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was *imported*; yet he ascribes its origin to the foul air of a foreign ship, *just arrived*. What is this but importation of disease? It is of little consequence to distinguish between the communication of fever, from a patient actually labouring under the disease, and from contagion preserved in some *fomes* on board a vessel.

We meet with little new information relative to the symptoms of the disease; except that we are told, respecting the black vomiting, that 'Dr. Stewart ventured to taste the black matter which was discharged from the stomach just before death in two instances. In both cases it blistered his tongue."

Dr. Rush divides the forms of this fever into eleven:

'1. In a few cases the contagion or miasmata produced death in four and twenty hours with convulsions, coma, or apoplexy.

'2. There were OPEN cases in which the pulse was full and tense as in a pleurisy or rheumatism from the beginning to the end of the fever. They were generally attended with a good deal of pain.

'3. There were depressed or LOCKED cases, in which there were a sense of great debility, but little or no pain, a depressed and slow pulse, a cool skin, cold hands and feet, and obstructed excretions.

'4. There were DIVIDED or MIXED cases in which the pulse was active until the 4th day, after which it became depressed. All the other symptoms of the locked state of the fever accompanied this depressed state of the pulse.

'5. There were cases in which the pulse imparted a perception like that of a soft and SHATTERED quill. I have before mentioned that this state of the pulse occurred in Dr. Jones and Dr. Dobell. I felt it but once and on the day of his attack in the latter gentleman, and expressed my opinion of his extreme danger to my son upon my return from visiting him. I did not meet with a case which terminated favourably, where I perceived this SHATTERED pulse. A disposition to sweat occurred in this state of the fever.

'6. There were what Dr. Caldwell happily called WALKING cases. The patients were here flushed or pale, had a full or tense pulse, but complained of no pain, had a good appetite, and walked about their rooms or houses as if they were but little indisposed until a day or two, and in some instances, until a few hours before they died. The impression of the remote cause of the fever in these cases was beyond sensation, for upon removing a part of it by bleeding or purging, the patients complained of pain, and the excitement of the muscles passed so completely into the blood-vessels and alimentary canal, as to convert the fever into a common and more natural form. These cases were always dangerous, and when neglected, generally terminated in death. Mr. Brown's fever came on in this insidious shape. It was cured by the loss of upwards of an 100 ounces of blood, and a plentiful salivation.

'7. There was the INTERMITTING form in this fever. This, like the last, often deceived the patient by leading him to suppose his disease was of a common or trifling nature. It prevented Mr. Richard

Smith from applying for medical aid in an attack of the fever for several days, by which means it made such an impression upon his viscera, that depleting remedies were in vain used to cure him. He died in the prime of life, beloved and lamented by a numerous circle of relations and friends.

'8. There was a form of this fever in which it resembled the mild remittent of common seasons. It was distinguished from it chiefly by the black colour of the intestinal evacuations.

'9. There were cases of this fever so light, that patients were said to be neither *sick* nor *well:* or in other words, they were sick and well, half a dozen times in a day. Such persons walked about, and transacted their ordinary business, but complained of dulness, and occasionally, of shooting pains in their heads. Sometimes the stomach was affected with sickness, and the bowels with diarrhœa or costiveness. All of them complained of night sweats. The pulse was quicker than natural, but seldom had that convulsive action which constitutes fever. Purges always brought away black stools from such patients, and this circumstance served to establish its relationship to the prevailing epidemic. Now and then by neglect, or improper treatment, it assumed a higher and more dangerous grade of the fever, and became fatal, but it more commonly yielded to nature, or to a single dose of purging physic.

'10. There were a few cases in which the skin was affected with universal yellowness, but without more pain or indisposition than usually occurs in the jaundice. They were very frequent in the year 1793, and generally prevail in the autumn, in all places subject to bilious fever.

'11. There were CHRONIC cases of this fever. It is from the want of observation that physicians limit the duration of the yellow fever to certain days. I have seen many instances in which it has been protracted into what is called by authors a slow nervous fever. The wife of captain Peter Bell died of a black vomiting after an illness of nearly one month. Dr. Pinckard, formerly one of the physicians of the British army in the West Indies, in a late visit to this city informed me, that he had often seen the yellow fever put on a chronic form in the West India Islands.'

The question of the origin of contagion, in this epidemic, unfortunately divided the faculty in Philadelphia. Dr. Rush, with twelve other physicians, imputed it to the foul air of ships arriving at the wharfs, and to putrid exhalations from sewers or marshy grounds. In one instance, however, (p. 52, 53) they supposed that the contagion of the yellow fever was imported in the sails of a ship from Port au Prince. The college of Physicians of Philadelphia, in a memorial presented to the Governor, declared themselves of opinion that the disease was imported from the West Indies; and the facts produced by them seem to be perfectly conclusive: but, as we have already reviewed this memorial *, we shall not repeat our ob-

* See Rev. N. S. vol. xxix. p. 452.

servations

servations on it here. To this paper, a reply was published by the medical gentlemen in opposition, which we have not room to analyse, but which does not appear to us to be a satisfactory answer.—We are sorry to remark, in this part of the work, the extraordinary facility with which Dr. Rush receives any facts which tend to support his peculiar hypothesis. He enumerates, among the causes of bilious fever, *old books, and bank-notes* *, *old timber and green timber* †, *and duck-ponds and hog-styes* ‡. Nothing can parallel this catalogue of the causes of fever in point of medical superstition; excepting the different modes by which old women cure the ague.

The remedies employed by Dr. Rush, in yellow fever, were, 1st, bleeding. In praise of this remedy he is profuse: but he observes that, in the late epidemic, it often failed to be of service after the first day, and frequently did mischief on the days subsequent to the second. This is an important limitation of its usefulness, which must in many cases amount to a prohibition of the practice. Respecting the propriety of the large evacuations by the lancet, directed by Dr. Rush, it would be scarcely becoming in us to hazard an opinion.

2. Purging was also of much importance in the opinion of the author. He gave large doses of calomel to procure evacuations from the bowels; and he has remarked, what every one acquainted with the effects of calomel must have observed, that, when common doses did not operate, enormous quantities of it were requisite. In such instances, Dr. Rush would probably have found Rochelle-salt, with infusion of senna, or some other mild laxative, answer his purpose more effectually.

3. The author proceeds to observe that, 'However powerful bleeding and purging were in the cure of this fever, they often required the aid of a SALIVATION to assist them in subduing it.'—To Dr. Rush's experience we cannot object: but his reasoning on the propriety of this severe treatment appears to us somewhat vague and inconclusive. We should have expected, *à priori*, that few constitutions would resist the excessive stimulus of mercury, superadded to the fever which already, by supposition, existed in the system:—but these are days of wonder, in medical as well as in political experiments.

Vomits, Dr. R. thinks, are prejudicial in yellow fever.

Some other therapeutical remarks occur, which are not very important.

This irregular essay concludes, in a singular manner, with the prognostics of the yellow fever.—They are such, however, as deserve the attention of practitioners.

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* P. 102. § 13. † Ibid. ‡ P. 103.

In his 'Observations on the Gout,' Dr. Rush has adopted the principles of the Brunonian system. On this part of the work we shall say little, because the fashion of that system has passed away, among the most respectable physicians of this country. It is curious, however, to see our exploded theories adopted in the new world, and in some parts of the Continent of the old, just as old wigs are exported from Middle-row in Holborn, to deck the heads of kings and princes on the slave-coast. Dr. Rush expresses a hope that all distinctions of morbid action will, in time, be lost in the general term, disease. He probably had in view the orator's definition of eloquence. What, it may be said, is Gout? Action!—What is Dropsy? Action!—What is Lethargy? Action!—It would be impossible to produce another answer, till the inquirer should arrive at the important question, What is your fee, Doctor? It would then occur to the medical sage that, though pounds, shillings, and pence may all be merged in the general term *Money*, without disadvantage to the abstract rules of philosophy, yet the loss to an individual might prove very serious, from confounding them under one *Genus*; and he would therefore exert his powers of numismatic arrangement, in calculating the *grades* of coin, and the number of heavy guineas due to him.—We hope that this harmless levity, in illustrating our grounds of dissent from Dr. Rush's general principles of pathology, will not give him offence. We respect his talents; and because we respect them, we grieve to see them misdirected by a delusive theory, which no longer influences the minds of respectable British practitioners.

We observe little that is new in Dr. Rush's history of this disease, excepting some attempts to identify other disorders with gout, in which we cannot coincide. We forbear to multiply examples of this sort of inaccuracy, and shall only notice the author's opinion (p. 159.) that the *tic douloureux* is a gouty affection; on which subject, we are now better informed by Dr. Haighton: but we must not overlook his extraordinary suggestion of the sameness of some states of the gout and the yellow fever! This is simplifying with a vengeance.

The methods of cure proposed for gout are, blood-letting, purging, vomiting, nitre, cool air, diluting liquors, abstinence from wine and other stimulating fluids, blisters, and *fear*. These are directed in that form of the disease which we term regular gout.

In the Atonic form, or what Dr. Rush denominates a *feeble* morbid action, remedies of an opposite class are advised; Madeira, porter, ardent spirits, &c. and, to crown all, SALIVATION.

Yes, gentle reader, salivation in the *feeble* state of the gout:—but we have not yet done with wonder:—

'The reader will perceive in the account I have given of the remedies proper in the feeble state of chronic fever, that they are the same which are used in the common typhus, or what is called nervous fever. There is no reason why they should not be the same, for the supposed two morbid states of the system, are but one disease.'

By the cap of Paracelsus, this parallel exceeds our most sanguine hopes of fresh trophies for the new triumphal car of Mercury!

The rules for prevention are nearly the same with those which have been prescribed by former writers.

The concluding Essay in this volume contains Observations on the nature and cure of Hydrophobia. Dr. Rush begins by informing us that he has satisfied himself with a theory of hydrophobia, which he hopes will lead to a rational and successful mode of treating it. Great, therefore, was our expectation of the theory thus announced; and great was our disappointment on learning that the Doctor considers it as '*a malignant state of fever.*' Such, however, must be the result of the loose analogies and undistinguishing arrangements, which the author has adopted: "fair is foul, and foul is fair;" gout is fever, and hydrophobia is fever, because fever is disease, and gout is disease, &c.—The use of the undefinable word, *malignant*, adds farther obscurity to Dr. Rush's theory. Sydenham has inveighed strongly against this term, which he declares to have occasioned more slaughter than the invention of gun-powder; and we had hoped that it was quietly laid up among other lumber,

"Abortive, monstrous, or unkindly mix'd," (MILTON.)

in Limbo. A theory cannot be reckoned clear, when it contains, in its essence, a term about which no two disputants will agree.

The first remedy proposed by Dr. Rush, in hydrophobia, is *blood-letting*:

'All the facts which have been mentioned, relative to its cause, symptoms, and the appearances of the body after death, concur to enforce the use of the lancet in this disease. Its affinity to the plague and yellow fever in its force, is an additional argument in favour of that remedy. To be effectual, it should be used in the most liberal manner. The loss of 100 to 200 ounces of blood will probably be necessary in most cases to effect a cure. The pulse should govern the use of the lancet as in other states of fever, taking care not to be imposed upon by the absence of *frequency* in it, in the supposed absence of fever, and of *tension* in affections of the stomach, bowels, and brain. This practice in the extent I have recommended it, is justified not

only by the theory of the disease, but by its having been used with success in the following cases.

'Dr. Nugent cured a woman by two copious bleedings, and afterwards by the use of sweating and cordial medicines.

'Mr. Wrightson was encouraged by Dr. Nugent's success to use the same remedies with the same happy issue in a boy of 15 years of age.

'Mr. Falconer cured a young woman of the name of Hannah Moore by "a copious bleeding," and another depleting remedy to be mentioned hereafter.

'Mr. Poupart cured a woman by bleeding until she fainted, and Mr. Berger gives an account of a number of persons being bitten by a rabid animal all of whom died, except two who were saved by bleeding.

'Dr. Marsillac has favoured me with the history of a case of hydrophobia from the bite of a mad dog, in which copious and repeated bleedings directed by Dr. Le Compt in France in the year 1786, performed a perfect cure in five weeks.—The bleedings were aided by another medicine to be mentioned in its proper place.

'In the 40th volume of the Transactions of the Royal Society of London, there is an account of a man being cured of hydrophobia by Dr. Hartley by the loss of 120 ounces of blood

'Dr. Tilton cured this disease in a woman in the Delaware state by very copious bleeding. The remedy was suggested to the Doctor by an account taken from a London Magazine of a dreadful hydrophobia being cured by an accidental and profuse hæmorrhage from the temporal artery.

'A case is related by Dr. Innes, of the loss of 116 ounces of blood in seven days having cured this disease. In the patient who was the subject of this cure, the bleeding was used in the most depressed, and apparently weak state of the pulse. It rose constantly with the loss of blood.

'The two last of the above cases were said to be of a spontaneous nature, but the morbid actions were exactly the same in both patients with those which are derived from the bite of a rabid animal.'

This profuse plan of evacuation must startle European practitioners, who have been accustomed to treat this disease on opposite principles.—We add the following curious fact;

'Before I quit the subject of blood-letting in hydrophobia, I have to add, that it has been used with success in two instances in dogs that had exhibited all the usual symptoms of what has been called madness. In one case, blood was drawn by cutting off the tail, in the other, by cutting off the ears of the diseased animal. I mention these facts with pleasure, not only because they serve to support the theory and practice which I have endeavoured to establish in this disease, but because they will render it unnecessary to destroy the life of a useful and affectionate animal in order to prevent his spreading it. By curing it in a dog by means of bleeding, we moreover beget confidence in the same remedy in persons who have been bitten by him, and thus

lessen

lessen the force of the disease, by preventing the operation of fear upon the system.'

Purging, sweating, and salivation,—Dr. Rush's general plan for treating diseases,—bring up the rear of depletion.

Such are the general contents of the volume before us.—We cannot but consider it as an extraordinary circumstance, that a physician of experience and reputation should adopt the indiscriminating system of Brown; which intelligent students commonly discard when they become familiar with the real appearances of disease. The evil consequences of such an adoption are but too apparent in the present work; in which the same routine of practice is recommended in yellow fever, in gout, and in hydrophobia. This routine is not so harmless as Moliere's recipe,

" *Clysterium donare,*
Postea saignare,
Ensuita purgare."

The loss of one or two hundred ounces of blood, succeeded by brisk purging, and followed up by the debilitating powers of salivation, is no neutral course of medicine!

Our conviction of the great danger, which is to be feared from the doctrines and practice recommended by this author, has compelled us to state our objections to both with freedom; it may be said, with severity: but it must be considered that authority in medicine has peculiar weight; and that a writer, who has established a reputation by former works, may contribute to the propagation of serious error by lending his name to the support of false doctrines and hazardous practices, at a subsequent period of his life.

We have received some other tracts by Dr. Rush, of which we shall take notice hereafter. (See p. 91.)

Fer.

MONTHLY CATALOGUE,

For SEPTEMBER, 1801.

PHILOSOPHY, NATURAL HISTORY, &c.

Art. 14. *The Naturalist's and Traveller's Companion.* By John Coakley Lettsom, M. D. The third Edition. 8vo. 4s. Boards. Dilly.

THIS will be found to be a very useful compilation for travellers, who may wish to bring home something more than the names of the towns which they have visited, or the signs of the inns at which they have been refreshed. The directions here contained, for conveying plants safely during sea-voyages, will be of particular utility.

Fer.

Art. 15. *A Meteorological Journal of the Year* 1800, kept in London, by William Bent. To which are added, Remarks on the State of the Air, Vegetation, &c.; and Observations on the Diseases in the City and its Vicinity. 8vo. 2s. Bent.

This is a prosecution of Mr. Bent's annual labours, which we hope will continue to meet with public patronage. Mr. B. has also printed a general title-page, and an introduction, for a volume consisting of the eight annual Journals which he has kept, from 1793 to 1800; which volume is sold for 15s. bound. The Introduction includes tables, from eight preceding Journals, of the greatest, least, and mean height of the barometer and thermometer, in every month of the years 1785 to 1792.

Fer.

Art. 16. *An Essay on the general Study of Experimental Philosophy*, and the Utility of Chemistry: introductory to a Course of Lectures on the Philosophy of Chemistry, and the Connection of that Science with the Arts and the other Sciences. By Anthony Todd Thomson, Surgeon, Honorary Member and late President of the Royal Physical Society; and Member of the Medical and the Speculative Societies of Edinburgh. 8vo. 1s. 6d. Callow.

A well-written paper, calculated to recommend the course of lectures proposed by the author.

Do

MEDICAL, &c.

Art. 17. *Considerations regarding Pulmonary Consumption.* By Thomas Sutton, M. D. 8vo. pp. 121 3s. Robinsons.

After a brief history of the case, which led to the train of investigation now before us, Dr. Sutton proceeds to state his doubts on the production of hectic fever by the absorption of Pus. This scepticism seems to have been a new idea with the Doctor, and he tells us that he was agreeably surprised to find Dr. Read supporting the same opinion. The first person, however, who supposed that the absorption of Pus does not necessarily produce hectic fever, was the late Mr. Hunter, who taught it many years ago.

Dr. Sutton next delivers his opinion of the proximate cause of the debility and emaciation which take place in phthisis; he imagines it to be obstruction in the mesenteric glands; and that the tubercles in the lungs, and some other pulmonary symptoms, are excited by sympathy. This doctrine, which he labours strenuously to support, may be refuted by a very obvious suggestion. It had escaped Dr. Sutton's consideration that the lungs perform a great, and indispensible part in nutrition. In the lungs, the chyle is assimilated with the blood; and any change of structure in them, which alters or impedes this operation, must at once emaciate and irritate the whole system. This view of the subject solves every difficulty started by Dr. Sutton against the common notion of the cause of phthisis, and renders his migration to the mesenteric glands totally unnecessary. — The plan of cure, by repeated emetics, which Dr. S. proposes, in consequence of his hypothesis, has been already recommended to the public on other grounds, but has never been adopted to any considerable extent; which is a sure proof that it has seldom succeeded.

Purging

Purging is also advised by Dr. Sutton; and he has advanced a most unaccountable opinion, that a natural cure of phthisis has sometimes been produced by the purging which attends the last stage of the disease. The united experience of the faculty has decided, on the contrary, that this species of diarrhœa is ultimately fatal.

Exercise on horseback, sea-voyages, and some other common methods of treating consumptive patients, are mentioned with approbation. Dr. Sutton professes to have tried the digitalis, unsuccessfully: but we cannot admit his experiments with it to be conclusive, because he gave it during the emetic course, which would certainly counteract its beneficial properties.

On the whole, we are sorry to find that Dr. Sutton has added nothing to the fund of useful knowlege, on the subject of this fatal disease. His zeal for the improvement of medical science, however, is highly commendable; and he may learn, by correcting his first ideas, hereafter to contribute to the common stock something which may be really important. **Fer.**

Art. 18. *Observations upon the Origin of the Malignant, Bilious, or Yellow Fever in Philadelphia*, and upon the Means of preventing it: addressed to the Citizens of Philadelphia. By Benjamin Rush. 8vo. 1s. Philadelphia. 1799. Imported by Mawman, London.

Dr. Rush continues, in this pamphlet, to support his opinion that the yellow fever is generated in Philadelphia, by various public and domestic nuisances. He has, in consequence, recommended the following means of prevention:

'1. Let the docks be immediately cleaned, and let the accumulation of filth in them, be prevented in future, by conveying water into them by a passage under the wharfs, or by paving them with large flag stones inclining in such a manner towards the channel of the river, as that the filth of the streets shall descend from them (after it falls into the docks) into the river. This method of paving docks has been used with success in the city of Brest. The street now known by the name of Dock-street once exposed a large surface of filth to the action of the sun. Its neighbourhood was more sickly at that time, than any other part of the city. By means of the present arch over that filth, Dock-street has been exempted from an unusual number of sick people during the summer and autumnal months.

'2. Let every ship that belongs to our port be compelled by law to carry a ventilator. Let all such ships as are discovered to contain foul air in their holds, be compelled to discharge their cargoes before they reach our city, and let the ships in port, be compelled to pump out their bilge water every day.

'3. Let the common sewers be washed frequently with streams of water from our pumps. Perhaps an advantage would arise from opening them and removing such foul matters, as streams of water are unable to wash away.

'4. Let the gutters be washed every evening in warm weather. By frequently washing the streets and pavements, the heat of the city would

would be lessened, and thereby one of the predisposing causes of the fever would in some measure be obviated. The use of water for the above purposes, has become more necessary since the streets and gutters have been so closely paved; for the filth which formerly soaked into the earth, is now confined, and emits its noxious vapors into the atmosphere.

'5. The utmost care should be taken to remove the filth from the yards and cellars of every house in the city. Hog-styes should be forbidden in yards, and the walls of cellars should be white-washed two or three times a year, and their floors should be constantly covered with a thin layer of lime. White washing the outside of houses in sickly streets, would probably be useful.

'6. Let the privies be emptied frequently; and let them be constructed in such a manner as to prevent their contents from oozing through the earth so as to contaminate the water of the pumps. The famous Ambrose Parey ascribed one of the plagues of Paris wholly to foul air, and impure water. Mr. Latrobe in a note, in his proposal for his present important undertaking, has very properly pointed out the impurity of our water as one of the remote causes of the yellow fever.—Happy will it be for the citizens of Philadelphia if by means of that gentleman's plan for supplying the city with river water, they should be delivered from the necessity of making use of the water from their pumps for drinking, and culinary purposes.

'7. Let all the filth be removed from the neighbourhood of the city, and let the brick kiln, and other ponds be filled up, from time to time, with the earth which is obtained in digging cellars.

'8. In the future improvements of our city, let there be no more dwelling houses erected in alleys. They are often the secret receptacles of every kind of filth. The plague always makes its first appearance in the narrow streets, or in the dirty huts of the suburbs of Constantinople.

'9. The predisposition of our citizens to be affected by the remote and exciting causes of the yellow fever, would be very much lessened by their living sparingly upon fresh animal food and chiefly upon broths and fresh vegetables rendered savoury by spices, and a small quantity of salted meat, during the summer and autumnal months. A constant attention should be paid at the same time to bodily cleanliness.'

The efficacy of these methods, we apprehend, would be greatly increased by the establishment of permanent fever-wards; which would check the progress of the disease, whether imported or home-bred. That mode of prevention which is supported by experience, with the least reference to theory, is unquestionably the best.

A larger work by Dr. Rush, on this subject, is noticed in p. 81. of this number of our Review. **Fer.**

Art. 19. *A Concise View of the most important Facts which have hitherto appeared concerning the Cow-Pox.* By C. R. Aikin, Surgeon. Small 8vo. pp. 202. with a coloured Plate. 2s. Boards. R. Phillips.

The

The leading facts relating to this important discovery are well digested and arranged, in this neat abridgement. The greater part of Dr. Jenner's book is here incorporated; and the principal objections, which have been urged against the Vaccine inoculation, are briefly, but satisfactorily answered. Now, indeed, that so much additional experience has been gained on the subject, we may consider the practice as established. **Fer.**

Art. 20. *Observations on the Cow-Pox.* By William Woodville, M. D. 8vo. 1s. 6d. W. Phillips.

These observations relate to the supposed impurity of the vaccine matter employed by Dr. Woodville in inoculation. Dr. Jenner had supposed that it was mixed with variolous matter, which is here strenuously denied; and the pustular erruptions, which attended some of Dr. Woodville's cases, seem now to be explained on a different principle. Dr. W. supposes that they resulted from the variolated atmosphere of the hospital, and he has mentioned several facts which render this solution probable. **Do**

Art. 21. *Reflections on the Cow-Pox*, illustrated by Cases to prove it an absolute security against the Small-Pox; addressed to the Public, in a Letter to Dr. Jenner, from William Fermor, Esq. 8vo. 1s. Robinsons.

As coming from an intelligent gentleman, unconnected with the medical profession, this pamphlet carries all the weight of unbiassed evidence. The cases, though not very numerous, are satisfactory, and are clearly related. **Do**

Art. 22. *Practical Observations on the Inoculation of the Cow-Pox:* to which is prefixed, a Compendious History of that Disease; and of its Introduction as a Preventive of the Small-Pox. Designed principally to promote a Knowlege of the Subject amongst those who have not hitherto attended to it. By John Addington, Surgeon. 8vo. 1s. 6d. Johnson.

The general facts stated in this pamphlet are nearly the same with those contained in Mr. Aikin's "Concise View:" but the author has corroborated them by several cases which fell under his own cognizance. He seems to have attended early to the subject of vaccine inoculation. **Do**

Art. 23. *A Comparative Statement of Facts and Observations relative to the Cow-Pox*, published by Drs. Jenner and Woodville. 4to. pp. 43. With a coloured Plate. 5s Hurst.

This is an acute and sensible view of the points in dispute between Dr. Jenner and Dr. Woodville On the subject of the origin of cow-pox-contagion from the greased heels of the horse, we are presented with the following curious experiment, related by Mr. Tanner, a Veterinary Surgeon:

"Some cow-pox matter on a thread was applied to the teat of a cow on the part from which a scab had been removed. I procured it from Mr. Fewster of Thornbury, who told me it had been kept a long time, and that he did not think it possible for it to produce any effect; I went to the cow, and examined the part where it had been applied, in five days after, but it had not produced the smallest effect.

Some

Some limpid matter, just taken from the heel of a horse, was then applied on the part; and on the ninth day, when I first examined it, I found that it had produced a complete vaccine pustule. From handling the cow's teats, I became infected myself, and had two pustules on my hand, which brought on inflammation, and made me unwell for several days. The matter from the cow, and that from my own hand, proved efficacious in infecting both human subjects and cattle."

As Dr. Woodville has very handsomely acknowleged, in his Observations, the probability that pustular eruptions, after vaccine inoculation, may have been produced by exposure to a variolated atmosphere, (which was the principal point at issue,) we shall not enter more particularly into the contents of this statement. **Fer.**

Art. 24. *A Conscious View of the Circumstances and Proceedings respecting Vaccine Inoculation.* 8vo. 2s. Hurst.

This is a kind of protest against the vaccine inoculation, composed partly in jest, and partly in earnest. The author is exceedingly afraid of the consequences of introducing a bestial disease among us; and so great, indeed, is his alarm, that we expected to find him predicting the growth of *horns* on the subjects of this practice. In the course of the pamphlet, however, we found, after several shrewd hints, that he is also a determined enemy to inoculation for the small-pox; which he declares to have supported the existence of the disease among mankind. We certainly have not been converted to this gentleman's opinions, respecting either of these diseases, as communicated by inoculation.

There seems to be an error in this title-page; the phrase '*conscious* view' has no meaning. We suppose that the author must have intended to write *concise*, or *conscientious*. **Dº**

Art. 25. *A Treatise on the Venereal Rose.* By William Butter, M. D. 8vo. 3s. Cadell jun. and Davies.

We must relieve the perplexity which many of our readers will feel from the title of this pamphlet, by informing them that it treats of virulent Gonorrhæa, which Dr. Butter considers as a species of Erysipelas: but this analogy, which he has laboured to establish in the body of the treatise, does not appear to be satisfactorily ascertained. Dr. B. has omitted all notice of what has been written by modern practitioners on this disease; and he has combated Astruc's theory of it, as if Hunter, and other eminent names, in this branch of medicine, had never existed. A considerable part of the *Ratio Symptomatum* is indeed expressed in such obsolete language, that we might be tempted to suppose that the writer was unacquainted with all recent opinions on the subject.

The cure of Gonorrhæa, recommended by Dr. Butter, consists chiefly in the internal use of Hemlock; a medicine for which he has long been a zealous advocate. If any of our readers should be disposed to try this method, for the success of which the author alledges his own experience, they will meet with full directions for employing it, in the treatise before us.—We cannot avoid adding that the language of this pamphlet is exceedingly unpolished. **Dº**

Art.

Art. 26. *New Inventions and New Directions*, productive of Happiness to the ruptured: with some military and parochial Considerations on Ruptures. By a private Gentleman. 8vo. 1s. 6d. Hurst. 1800.

This gentleman informs us that he has obtained relief in a rupture of long-standing, by wearing a cushion of coarse calico, under the pad of his truss; and by fixing the circular bandage directly round the body, so as to surround the lower part of the sacrum, instead of carrying it, as usual, over the hips. He appears to write from long observation, and with feelings of benevolent commiseration excited by painful experience; his hints, therefore, undoubtedly deserve attention from those who are interested in alleviating this too common affliction.

Fer.

Art. 27. *On the Necessity for contracting Cavities between the Venous Trunks and the Ventricles of the Heart;* on the Use of Venous Sinuses in the Head; on the wonderful Provision made for the Transition from the fœtal to the breathing state; on Palpitation; on Death; and on Life; with Reflections on the Treatment of Animals. By John Walker. 8vo. pp. 42. Edinburgh, Mudie; London, Darton and Harvey.

This essay was originally composed in Latin, and was designed for the author's inaugural dissertation at Leyden. We find nothing in it which has not been taught by preceding writers on physiology: but the arrangement, as is usual in treatises written to obtain a degree, is more studied than that of a common pamphlet. *Materiem superabat opus.*

Do

POETIC *and* DRAMATIC.

Art. 28. *The Pleasures of Solitude.* A Poem. By P. Courtier. Crown 8vo. 2s. 6d. Boards. Hurst. 1800.

This small poem, which is divided into three books, is not deficient in elegance of thought and neatness of expression; which are the chief qualities that we have a right to expect, in a composition relating to a subject so often treated by former writers. We have some doubt, however, whether the stanza chosen by the author be well adapted to his subject: it reminds us, indeed, of the delicious song of the Wizard, in the Castle of Indolence: but, even in Thomson's hands, the stanza is found too lingering and heavy, in other parts of that poem. Mr. Courtier's Solitude is very different, however, from the lazy retreat of that immortal author: it is the repose of one who is broken by the storms of life, and

> "Whose pinnace anchors in a craggy bay,
> After the tempest;——"

and he has been successful in contrasting scenes of turbulent gaiety, with the mild enjoyments of rural life:

> 'See through the mazes of the midnight ball
> With rapid feet yon splendid triflers fly;
> From every tongue what flattering periods fall!
> How smiles each face! how sparkles every eye!

So

So loud their mirth, thou deem'st no sorrow nigh.
But learn, thou erring judge, there envy lours,
There jealousy extorts the bitterest sigh,
There, all her poison'd chalice scandal pours,
And lassitude soon clogs the bliss-devoted hours.

' But ô how sweet, how passing sweet, to rove
Where sits unseen the minstrel of the night,
And trills such music o'er the listening grove
As sure might harmonize the rudest sprite!
Then, while the moon from her meridian height,
And all the countless stars that round her burn,
Shed o'er the tranquil scene their tender light,
The soul, sublimed, each earthly care may spurn,
And towards its native heaven with holy longing turn!

' Then, nought of discord harsh thine ear shall wound,
Like theirs who tread the city's crouded ways!
The distant water's faintly murmuring sound,
The whispering wind that through the foliage strays,
The tinkling bell of sheep that startled gaze,
The clock's deep chime from half-hid village spire,
The watchful dog at fancied thief who bays,
Though simple all their tones, such thoughts inspire,
That from thy bosom far shall passion's brood retire.'

This is very well said; and there are other passages which it would give us pleasure to extract: but we must not plunder so short a composition.

We have been particularly pleased to remark, that the diction of this writer is not formed on the affected model which we have often had occasion, of late, to disapprove. His style is flowing, and generally pure; though we have observed one or two exceptions: for example, ' dregged the chalice,' for drain'd it to the dregs; and ' to *individualize*,' which is not only unpoetical, but is not an English word. We might mention other instances of the same kind, but we only point out these for the purpose of warning against that spirit of innovation in style, which threatens a decline from the language of our good writers; and which, if unchecked, would insensibly corrupt even those who, like Mr. Courtier, are capable of rising above prevalent barbarisms. We trust, therefore, that he will take our admonition in good part. Fer.

Art. 29. *Rime scelte di Francesco Petrarca.* Crown 8vo. 5s. Boards. Becket. 1801.

The paper, the type, and the selection of sonnets and canzoni, are all the circumstances which require notice in this publication; and they are excellent.—It is too *late in the day* to think of analysing the poetry of Petrarca. Young and tender readers deem it exquisitely sweet and sorrowful: while the old and tough-hearted consider it as downright nonsense,—*belle parole*, pretty words, without meaning; and a third set, without feeling all the monotony of complaint and ideal misery, will admire the elegance of the language, and the beauty of the versification. Dr. B.

Art.

ART. 30. *Virginia*, an Opera, in Three Acts, by Mrs. F. Plowden. 8vo. 2s. Barker. 1800.

This play having been ill received by the audience on its representation, the author has determined to "*print it, and shame the fools.*" The preface informs us that it was composed under the pressure of misfortune; we shall therefore be glad if it meets with more favour in the closet; and that we may throw no obstacles in the way of its success, we shall dismiss it with merely our good wishes. **Fer.**

ART. 31. *A Review of the Musical Drama of the Theatre-Royal, Drury-Lane*, for the Years 1797, 98, 99, and 1800; which will tend to develope a System of private Influence injurious to musical emulation and public Entertainment; and to elucidate several interesting Points of Matter in Mrs. Plowden's late distinguished Publication. Addressed to the Proprietors of the Theatre. By R. Houlton, M.B. 8vo. 2s. Westley. 1801.

In this kind of warfare, as in all others, we pretend not to judge of facts before we have heard both sides: but there never was, we suppose, a dramatic entertainment of any description brought on the stage, without cabal of one kind or another. How Mr. Kelly supports his influence over the managers, we know not. The vocal *conoscenti* affirm that his singing is mongrel; half Italian and half Irish: that is, *macaroni* dressed in *potatoes*;—and his *composition*, say fastidious critics, is of no style, either national or individual:—it is memory and transcription. Regularly bred composers are up in arms against him, and against the public for tolerating his pretensions.—Whether Mrs. Plowden's drama had intrinsic merit sufficient for its salvation, with fair play, our readers may perhaps conjecture from the preceding article: but there can be little doubt of the opposition of Mr. K. to the claims of all musical candidates for fame at D. L. except his own.

We shall say no more relative to these truly *tweedle-dum* and *tweedle-dee* quarrels, than that the pamphlet before us is written on stilts; and that the author seems to be a partizan, who represents only one side of the dispute.

Of Mr. Houlton's opera intitled *Wilmore Castle*, an account was given in our number for July last, p. 323. **Dr. B...y.**

ART. 32. *Olimpia, Dramma in Cinque Atti*; &c. Olympia, a Drama in Five Acts, written in Italian Prose by Gaetano Polidori, Teacher of the Italian Language in London. Small 8vo. Sold by the Author, No. 42, Broad-street, Soho.

This tragedy is not inferior in merit to two others by the same author, of which we have already spoken favourably *:—the conduct is regular; and the incidents are affecting. If the end of tragedy be "to excite terror and pity," Sign. Polidori has amply accomplished that purpose, and has very unexpectedly unravelled his plot by a happy termination. We were somewhat surprised, however, to find that the wife of him who causes all the disasters, which happen to the heroine of the piece and her family,—and who, like Lady Macbeth, is the instigatrix to all her husband's atrocities,—

* See M. R. vol. xxviii. N. S. p. 352.

seems to escape not only unpunished, but uncensured.—If the tyranny of the Sicilian government and nobility be faithfully described in this drama, the lower orders of that kingdom are worse treated than those of Turkey. Dr. B...y

Art. 33. *The Shoe-Black.* Dedicated to the Right Honourable Abraham Newland, Master of the Mint, &c. &c. &c. 4to. 3s. Cawthorn.

Black balled: not because we deem the poem unworthy of a shoe-black, but because it displays only the abilities which might be found in such a station. Can we bestow one atom of praise, or even refrain from passing condemnation, on such a couplet as this?

'Where late, for freedom from the liquid fire
Expos'd at elbow to salubrious air.'

Pray, Mr. Blackey, keep to your brush, and leave not your "useful calling" for this "idle trade" of wretched verse. Mo-y.

Art. 34. *Poems translated from the French of Madame de la Mothe Guion, by the late William Cowper, Esq. Author of the Task.* To which are added some original Poems of Mr. Cowper, not inserted in his Works. 24mo. pp. 132. 2s. 6d. Williams. 1801.

Of this publication, the editor, the Rev. Mr. Bull of Newport-Pagnel, gives the following account:

'One day amusing myself with the poetical works of the celebrated Madame Guion, I was struck with the peculiar beauty of some of her poems, as well as edified with the piety and devotion of which they are strongly expressive. I mentioned them to Mr. Cowper; and partly to amuse a solitary hour, partly to keep in exercise the genius of this incomparable man, I requested him to put a few of the poems into an English dress. Afterward, during my absence upon a journey, I received a letter, in which Mr. C. says, "I have but little leisure, strange as it may seem. That little I devoted for a month after your departure to the translation of Madame Guion. I have made fair copies of all the pieces I have produced on this last occasion, and will put them into your hands when we meet. They are yours to serve as you please, you may take and leave as you like, for my purpose is already served. They have amused me, and I have no further demand upon them." On my return, Mr. C. presented me with these translations, to which he added the Letter to a Protestant Lady in France, and the poem on Friendship. The idea of printing them was afterwards suggested to Mr. C., and he gave his full consent, intending to revise them before I should send them to press.'

This revision of them, however, never took place, though the translation was made in 1782, and Mr. Cowper did not die till 1800; and we think that Mr. Bull is not justifiable in presenting to the world those productions which their author proposed to correct, but never had the opportunity of revising. Had Mr. Cowper deemed them worthy of publication, is it not natural to infer that he would have inserted them in some of the numerous editions of his works?—His omission of them proves strongly, (though in a negative way,) that he had no wish that they should appear; and was it for a *friend*

to

to introduce to the notice of the public, compositions thus circumstanced?

The poem on Friendship, *as here preserved*, contains very beautiful passages.—How just is the following reflection!

'A fretful temper will divide
The closest knot that may be tied,
By careless sharp corrosion;
A temper passionate and fierce
May suddenly your joys disperse
At one immense explosion.'

The author's pleasantry and humour are shewn in this couplet:

'The man that hails you, Tom or Jack,
And proves by thumps upon your back
How he esteems your merit,
Is such a friend, that one had need
Be very much *his* friend indeed
To pardon or to bear it.'

We have heard from very good authority that a corrected and improved copy of these verses is in existence: which, we trust, will find a place in Mr. Hayley's promised Life of this fascinating poet. The lines addressed to a Protestant Lady in France are extremely pleasing, and calculated to awaken serious and important reflections. Some mortuary verses written for the town of Northampton, from the year 1787 to 1793, complete the contents of this little volume. **S.R.**

Art. 35. *A Poetical Tribute to the Memory of William Cowper, Esq.* Author of "The Task," &c. By Thomas Chater. 8vo. 1s. Sibly.

Mr. Chater has here fully demonstrated his high and ardent regard for the memory of the excellent person who is the subject of his panegyric: but truth obliges us to add (and we are truly sorry for it,) that, by the very inadequate manner in which he has manifested that regard, he betrays his own total incapacity for the due execution of the task which, in an unfortunate hour, he undertook.—It is on such mortifying occasions as the present, that we are sometimes almost tempted, (for the honour of literature,) to wish for a *Licenser of the press*:—merely, however, to prevent those who cannot *write*, from *printing and publishing their works*.

Art. 36. *Matilda*, or the Welch Cottage. A Poetic Tale. By the Author of Theodore, or the Gamester's Progress; &c. 8vo. 2s. White, &c. 1801.

We generally treat young sinners with all the lenity which we can muster: but the author of this little tale has had both time and experience sufficient to mature his faculties, and to emit a few more sparks of genius than we have found in his present production. The complicated story is but aukwardly told; since the characters, and their several histories, are too numerous to be impressed on the memory by so short a developement; and though the principles are good, the reflections are chiefly wise and well-known saws,—truisms indisputable. So much for originality:—but the paucity of genius, and the want

of dexterity in guiding his Pegasus, are not all the points on which we have to speak. Verbal criticism demands our notice. The terms *unminished* and *unbitter'd* have not yet been licenced: nor have the words increase, ~~or~~ prefaced, been thus accented by any good writer of our acquaintance. We must also object to the long parentheses, one of nineteen lines, and another within it; to the copious and numerous mottos; and to the repetition of favourite epithets and phrases, before they have ceased to vibrate on the ear. The *full blue eyes*, and *full blue orbs* of his heroine, would probably not have been forgotten, if the reader had been less frequently reminded of them.—Finally, we have to observe that

> The lofty tone Miltonic sudden sinks,
> And Bathos true becomes, at sounds familiar
> Of poor STORACE, and "*No song no supper.*"

D.r B...y

FARRIERY.

Art. 37. *Observations on the Formation and Uses of the natural Frog of the Horse;* with a Description of a Patent artificial Frog, to prevent and cure contracted Hoofs, Thrushes, Cankers, and Sand-Cracks. By Edward Coleman, Professor of the Veterinary College, &c. 8vo. 1s. 6d. Johnson. 1800.

We have had occasion to mention Mr. Coleman's opinions respecting the natural structure and use of the frog, in our review of his work on shoeing horses *. His artificial frog is calculated, on the principles laid down in that work, to prevent the mischiefs arising from contracted hoofs, sand-cracks, &c. We shall make no extract from a pamphlet which ought to be perused entire.

Fer.

Art. 38. *The Principles of English Farriery vindicated;* containing Strictures on the erroneous and long-exploded System, lately revived at the Veterinary College; interspersed with cursory Remarks on the Systems of Solleysell, De Saunier, De la Fosse, &c. in which is fully displayed, the Superiority of English Farriery over that of foreign Nations. By John Lane, A. V. P. late of the 2d Regiment of Life Guards. 8vo. pp. 97. 4s. Egerton, &c. 1800.

We have here a warm attack on Mr. Coleman's Veterinary publications, and particularly on his method of shoeing. Mr. Lane is not the most polished antagonist, but he shews considerable acquaintance with the state of farriery, both in this country and in France; and with the principal authors who have treated of it. He particularly asserts the superiority of English farriers, in point of manual dexterity; to which purpose he has quoted some strong passages from La Fosse. Mr. Lane has undoubtedly shewn that he can wield the pen as well as the hammer: but, respecting the general merits of the question, we must say, *Non nostrum tantas componere lites.*

D.o

Art. 39. *Cursory Account of the various Methods of shoeing Horses,* hitherto practised; with incidental Observations. By William Moorcroft. 8vo. 2s. Nicol. 1800.

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* See M. Rev. N. S. vol. xxix. p. 383.

This

This is an ingenious pamphlet; and the author's descriptions of different methods of shoeing are illustrated by neat wooden cuts. Mr. Moorcroft recommends the parallel shoes, for preserving an even tread, and for permitting the frog to come equally in contact with the ground; and, as he manufactures the shoes by means of machinery, he is enabled to sell them at a price which may bring them into general use.

Fer.

Art. 40. *A Manual for the Use of Coachmen, Grooms, Ostlers, and all Persons concerned in the Care and Management of Horses;* being a Selection of near Three Hundred Receipts for the several Disorders to which that noble Animal is subject. Together with some general Observations, and an Index. 12mo. 2s. Boards. Lee and Hurst.

This is an useful collection of receipts, and a safe guide for the persons whom it is intended to serve. The analogy between the diseases of the human subject and the horse is very considerable; and there has been a corresponding resemblance in the mistaken treatment applied to them. Both parties, we hope, are now likely to be better managed.

Do

AGRICULTURE.

Art. 41. *A Letter addressed to the Right Hon. Lord Carrington, President of the Board of Agriculture.* By Colonel Fullarton, of Fullarton, M. P. F. R. S. 8vo. 2s. 6d. Debrett. 1801.

This letter manifests that Col. Fullarton is not only a good practical agriculturist, but also a good political economist. His remarks on the mode of treating different kinds of soils, with the view of promoting the intention of the Board of Agriculture, as expressed in their subject proposed for a prize essay, are extremely judicious; and we should hope that they have not been unnoticed by those for whose benefit they were chiefly intended. His notions respecting the poor, and the provisions which ought to be made for them, harmonize very much with our own; and we warmly recommend them to the serious consideration of the British public. He is of opinion that the poor, and the small holders of common rights, are not justly nor judiciously treated in the usual mode of appropriating and inclosing wastes; and that these measures should undergo some important regulations. With the allotment of small portions of the common, or waste, means should be furnished for enabling poor families to be well lodged and completely subsisted; and then, by the aid of such allotments, the increase of them would afford the greatest benefit to the community: but otherwise these assignments to the poor will be soon purchased by the rich, and the cottagers will be thrown on the parish, to be kept out of the rates, instead of supporting themselves by their own industry.—The author gives the following pleasing picture of a cottager and his family:

'Having occasion for a drainer, I established an industrious man, of that profession, in a cottage, having a garden, and near four acres of sandy ground, adjoining to a rabbit warren. The ground not worth more than 10s. per acre; the house and garden worth 40s. more; altogether 4l. per annum. The man was bound, by contract, to

clear a main drain through a peat-bog, annually, at the rate of 7l.; the remainder of the year, when not employed on his own four acres, he had work, at the rate of 1s. per day. He cropped above half an acre of sandy garden ground, with pease, beans, carrots, turnips, kail, cabbage, and potatoes; the last, in larger quantities than all the rest. He ploughed, manured, and sowed near two acres, with oats, barley, and wheat, for his own consumption. On the remainder, being sown grass, with the aid of fodder from his crop, he fed a cow, which yielded milk for the family. He brought up a calf, kept some pigs, and a stock of poultry. He raised always a portion of flax, which was steeped, and dressed at a flax mill, worked, and spun into yarn, by his wife and daughters. They afterwards bleached the yarn, and sent it to the weaver, by whom it was wove into linen for the family use. In addition, they procured, every year, a few fleeces of fine wool, which were manufactured into woollen drapery, and clothed the family. Part of the worsted was knitted, into stockings. Of course, he was little at the mercy of high prices, or of fluctuating markets.

'In this manner, and on these means, without any other assistance, he brought up a family, of four sons, and three daughters, gave them all complete education, fitted to their station, such as reading, writing, arithmetic, and book-keeping. Every one of the sons has gone into respectable employments. Each of them could purchase the fee-simple of the property on which he was bred.'

This is the description of poor which we wish to see increased in the kingdom:—men who, though in humble situations, have yet a stake in the country, and are not secluded from the rest of their fellow-subjects by being immured in *monastic receptacles for poverty*. Mo.y.

RELIGIOUS.

Art. 42. *Advice to a Minister of the Gospel*, in the United Church of England and Ireland. Being a Continuation of Advice to a Student in the University. To which is added a Sermon on the Pastoral Care By John Napleton, D. D. 8vo. 2s. 6d. Sael and Co. 1801.

The terms of commendation, in which we noticed Dr. Napleton's *Advice to a Student*, (see M. R. vol. xxi. p. 214), are equally due to this professed continuation of that work; which we recommend to the serious perusal of every clergyman of the established church in the united kingdom. Learning, experience, good sense, a knowlege of the world, a concern for the honour and usefulness of the clerical character, and for the general interests of religion and good government, unite in the advice which he here gives to *Incumbents*, on their proper duties and studies, and to *Archdeacons*, *Deans*, *Chancellors of Dioceses*, and *even* to *Bishops*, on the conduct required of them in their respective offices. The whole is managed with so much ability, that, even where we do not yield a full assent to the author's opinions, we admire his genius and his power of argument. No one has more neatly explained the clerical system, and the duties appertaining to it. Having been an examining chaplain, he has had opportunities of witnessing the frequent incompetency of those who present themselves as candidates for holy orders; and his recommendation of *learning*,

learning, as an essential qualification of a clergyman, is so truly excellent, that we must find space for its insertion.

'I have one particular caution to offer to my successors in this office (examining chaplain): namely, to resist all solicitation to recommend to the Bishop an imperfect candidate for deacon's orders, in the hope of finding him, by promised intervening diligence, better qualified at his examination for priest's. Generally, the same causes will continue to operate. If they do not, the candidate will be substantially benefited by being postponed to a future ordination: as he will then be ordained a deacon with satisfaction and honour. If they do, the examiner will have escaped a very painful dilemma; of being driven by one error to commit a second; or of advising to leave the candidate a deacon, excluded from secular employments, in a situation neither beneficial to himself, nor useful to the church.

'Literature, and sacred literature in particular, is requisite to a clergyman, not only as it is necessary to the edifying discharge of his pastoral duties, but as it forms, and shews, the turn of his mind; influences, and implies, his habit of life; fills up his time; makes him happy at home; detains him from pursuits improper in kind, or excessive in degree; keeps his mind in a due tone for every work of his ministry. In every view, it is a vital part of his character. If parents will persist in destining a child to this profession, whether qualified or not by nature and industry, and finally offer him in vain, the disappointment is severe, but might have been foreseen: and if a young man, with the advantage of an expensive education at the university, will not, from the dawning reason of sixteen to the more enlightening age of three and twenty, under the assistance and warnings of his tutors and governours, look forward, and qualify himself, the disappointment is alike severe; but he is less to be pitied than his partial, and frequently ill-advised parents: and I trust that I do not exceed the bounds of candour and humanity, if, for the discouragement of dissipation and idleness, I wish you hereafter to say to such a one, in the language (nearly) of the Roman Consul: "Adolescentes corrupti desidiâ ita ætatem agunt, quasi honores nostros contemnant: ita hos petunt, quasi honesté vixerint. Næ illi falsi sunt, qui diversissumas res pariter expectant, ignaviæ voluptatem, et præmia virtutis."*

A sermon on *the pastoral care*, from John, xxi. 17. is subjoined, preached at Lambeth chapel at the consecration of Dr. Buckner, Bishop of Chichester. It is ingenious, and suited to the occasion. Mo-y.

Art. 43. *The Millenium: or chearful Prospects of the Reign of Truth, Peace, and Righteousness; and serious Reflections on the Commencement of the New Century:* Two Discourses, preached, the first on Nov. 5, 1800, and the second on Jan. 4, 1801, in the New Chapel, Bridport, with Notes. By Thomas Howe. 8vo. 1s. 6d. Longman and Rees.

The Apocalypse is dangerous ground for divines; yet they love to venture on it, and often build lofty doctrines on the precarious interpretation of its mysterious passages. Though Sir Isaac Newton

'* Sallust. Bell. Jugurth.'

amused himself with it, Calvin would not undertake its elucidation; which Scaliger considered as a proof of his wisdom. The predicament in which this book stands, and the use to which mystics and enthusiasts have applied it, should caution enlightened theologians against making it the basis of any singular dogma; especially those who contend for the purity of the *gospel* system, and for the reign of pure uncontaminated truth. Mr. Howe has chosen for the text of his first sermon, (preached in commemoration of what is vulgarly called *the Gunpowder Plot*, and of the Revolution in 1688,) Rev. xi. 15.; and, in speaking of the book from which it is taken, he tell us that 'it contains prophecies of events of the most important and interesting nature, which are to succeed each other from the first century to the end of the world:' but there is nothing to justify this position;—any more than his assertion, towards the end of his discourse, that the expression "for ever and ever" signifies a thousand years, more or less, in which the saints are to reign with Christ on earth, in purity, righteousness, and benevolence, previously to the general resurrection.

Our Saviour and his apostles predict the final prevalence and triumph of Christianity, and elevate our faith to a future world, in which persevering piety and virtue will be rewarded: but do they speak of a millenial state, or of the coming of Christ, except it be to the final discriminating judgment? If such a doctrine be not clearly and unequivocally revealed in the plain and uncontroverted books of the New Testament, ought preachers to abet the cause of mystical interpretation, by strained comments on, and doubtful inferences from, the book of Revelation?—Mr. Howe's subsequent remarks on the diffusion of knowlege, liberty, peace, and righteousness, by means of Christianity, are judicious; and we lament that his observations are not all of this description.

The second discourse, on the commencement of the new year and new century, from Eccles. i. 4. is serious, impressive, and practical; calculated to awaken the heart to piety and benevolence, to confidence in Divine Providence, and to a virtuous improvement of this transient life. These are the proper topics of Christian exhortation, and are of much more importance than conjectures on the fall of the Ottoman empire, and the restoration of the Jews. Mo-y.

Space—

Art. 44. *Hints on Sunday Schools, and Itinerant Preaching*, in a Letter to the Bishop of Rochester. By John Townsend. 8vo. 2s. Matthews, &c.

Conscious guilt alone could have restrained any body of men from making a defence, when attacked by such charges as the Bishop of Rochester has preferred against the Methodists *. The Bishop, indeed, in the ardour of his zeal, seems so completely to have lost sight of all prudence as a polemic, and to have laid himself so open to assault in return, that there cannot be much glory, because there is not much difficulty, in disarming him. Mr. Townsend first enters the lists; and though, as he tells us, 'his head never slumbered beneath a collegiate or an academic roof,' so confident is he of the truth and justice of his cause, that he anticipates the triumph which

* See p. 32-33. of this Review.

he

he must obtain over the learned and dignified ecclesiastic. This itinerant preacher boldly accuses the Bishop of having 'taken up inveterate suspicion and prejudice,' of 'writing under the influence of an irritated mind,' of 'casting injurious aspersions,' of 'calling names,' of using 'vulgar and low phrases,' and 'of exhibiting a temper unworthy of the cause which he professes to plead.' Yet he assures us that it is 'not his intention to irritate or provoke, but if possible to soften and convince.

After having quoted the passage which we extracted in our account of the Bishop's Charge, he adds; 'this passage is a downright libel of the worst kind, because it is against whole bodies of men, who have no other medium left of doing themselves justice but by *living it down;* and this I have no doubt they will do effectually in time.' He vindicates the superintendants of sunday-schools from the charge of Jacobinism; and for the ladies, who have benevolently taken these institutions under their care, he thus pleads: 'We intreat your Lordship to let our wives and daughters enjoy, unmolested, the luxury of doing good. It is, indeed, their delight; and the whole of their plans and exertions tend to better, in various ways, the miserable condition of the ignorant and distressed poor, and have no more to do with any thing political than with the problems of Euclid. It is much more pleasant to see them employ all their leisure time thus, than that they should spend it, where too many do, (to their own ruin) at card-tables, theatres, and masquerades.'

Of *itinerant preaching*, Mr. T. is a very warm advocate. He, indeed, is surprised that odium should attach to it, as it is in itself 'an antient and honourable service;' and since, he says, 'the very angels, if the Lord would employ them, would count it honour to come down, and in the character of itinerant preachers, go from city to city, and from village to village,' he is of opinion that 'it would be no disgrace either to the clergy, or even to the bench of Bishops, if they would become itinerant preachers.' He is even so *unpolite* as to tell the latter that they *ought* to become such.

Mr. T. concludes with requesting his Lordship to review his late Charge, to think more favourably of the *non-descripts*, and to exchange his enmity towards sunday-schools for good will. The late exertions of itinerancy are explained to have arisen, not from Jacobinism, but from the Missionary Society. Mo-y.

Art. 45. *An Apology for Sunday Schools.* The Substance of a Sermon preached at Surry Chapel, Feb. 22, 1801, for the Benefit of the Southwark Sunday Schools; with incidental Remarks on the late Charge of the Right Rev. the Lord Bishop of Rochester. By Rowland Hill, A.M. 8vo. 1s. Williams.

Behold another champion in the field, prepared to vindicate the honour of the injured damsel *Methodista!* This knight evinces himself well qualified for the combat; and it has amused us to observe the playfulness, as well as the dexterity, of his onset. Mr. Rowland Hill, like Mr. Townsend, is in earnest, but he is also sarcastic; being, as we suppose, of opinion that, though his adversary be a right reverend prelate, he ought, in the present instance, rather to be "touched and shamed by ridicule," than gravely refuted. While

he boldly challenges the enemies of methodism ‘ to produce *one single instance* of *one single school* in which *one single hint* of a political nature has been ever dropt, he advises the Bishop to reconnoitre their conduct, that their rebellious *pranks* may be detected. ‘ And (he proceeds) if any persons wish to know our *tricks* and plans, by a very trifling subscription, they have it always in their power; and they may depend upon it they will be sworn to no secrecy. While through the medium of the press we take a considerable deal of pains, and sustain a large expence to make as public as we can all the places of our *secret meetings:* and at the same time without the least reserve, we promiscuously hand about the names and places of abode of the subscribers and active managers of all our *jacobinical, deistical, atheistical* concerns.”

In the dedication of the discourse, Mr. Hill proceeds in the same strain; and if he suspects his Lordship of ‘ malevolence,’ he takes good care to keep himself from being out of temper. “ There is *much ground for suspicion* (says the Bishop) that *sedition* and *atheism* are the real objects of these institutions—this *I know to be a fact.*” To these words, the following comment is attached: ‘Though it may seem a little unintelligible that his Lordship should have *much ground to suspect* what he *knows to be a fact*, yet the charge is pushed completely home, without hesitation. These *atheistical Jacobinical hypocrites*, who deserve a halter as much as ever his Lordship deserved a better bishopric—so soon as he has proved the charge, and surely there can be no great difficulty, if, as he says, he knows it to be ‘ a matter of fact:’—these abominable infidels in disguise, I say, are receiving Bibles and Testaments from the Sunday-school Society, that they may *disseminate infidelity* by distributing and explaining *the book of revelation!* And does this need a confutation?’

Mr. Hill corrects Mr. Townsend (very properly) in considering the Bishop’s epithet *non-descripts* as relating to dissenters. ‘ Dissenters (says he) are descripts;’ by *non-descripts*, he means, such as are not avowedly dissenters.’ In this class, Mr. Hill appears to stand; since he professes himself to be a member of the established church, and yet his mind is evidently actuated by the principles of dissent. With this matter, however, we have no concern. **Mo-y.**

POLITICS, *&c.*

Art. 46. *The Boa Constrictor;* an Illustration from the Natural of what has appeared in the Political World: suggested in Consequence of a Recollection of Events which was provoked by a late French Semi-official Publication in the *Moniteur.* Concluding with some Considerations respecting Negociation. By the Author of the Theory of Chess. 8vo. 1s. Hatchard. 1801.

We remember to have read surprizing accounts and wonderful stories, gravely told by travellers and serious writers, of a most enormous serpent, in the East Indies, called the *Anacondo;* which, it is said, swallows the great Tiger-royal, and even the Buffalo, and other large animals;—having first twisted itself round them, broken all their bones, and then anointed them with a *slaver* which accelerates the descent of the huge mass into the ravenous maw of the devourer. —By the *Boa Constrictor*, we suppose, the author of this little pamphlet

By P. Pratt
see art. 47.

phlet alludes to the same gigantic serpent; whose horrid powers and modes of destruction he compares with the conduct of the French Nation. They have, he observes, accustomed themselves, like the B. C. to *slaver* over with delusive professions, and then to devour, the neighbouring states and countries which, in the course of the revolutionary war, have had the misfortune of being subdued by them.

From this comparison of the two monsters, the writer deduces some prudential inferences and cautionary hints to Great Britain, and the other powers which seem, at the present juncture, disposed to *negociate* with such an adversary; warning them to beware how they treat with, and trust to, the good faith of the *Boa Constrictor* of Europe.

Art. 47. *Considerations on the Momentous Subjects of Peace, and War, and Negociation*, in Answer to the Pretensions of France. By Mr. P. Pratt. 8vo. 2s. Hatchard. 1801.

Though Mr. Pratt appears to have an overweaning partiality for metaphors, he may not perhaps be much gratified by being told that, if his pamphlet contains any of the ore of good sense, it exists under a thick and heavy superstratum of impure language. He talks of 'hurling vulneration,'—of 'a temporary *grasp* vanishing from the test of nice and equitable assay,'—of 'distillations of slaughter,'—of 'removing an implication that the distributions to devotion are not uniform,'—'of heart-felt effusions from the bosom of conviction,'—of 'the head quarter of civilization,'—of 'power descending to absolute imparity,'—and of 'giving whirling ruin to circumscription.' It is impossible, however, by quoting such scraps of Johnsonian affectation, in which the abstract is always employed for the concrete, to give an adequate idea of the viciousness of Mr. P.'s style, and to expose it to sufficient reprobation. He apologizes, indeed, for his long periods, and particularly for the first, which extends through more than *two pages*: but we cannot perceive that it could not have been 'broken down' into several smaller sentences, without injuring its sense and force.

To leave the *language* and come to the *ideas* of Mr. Pratt;—he is of opinion with the author of the tract mentioned in the preceding article, that the French Republic may be compared to the immense serpent of the island of Ceylon, called the *Boa Constrictor;* and, attempting a majesty of style, he calls on the powers of Europe to watch this huge political serpent, which breaks the bones and sucks the marrow of kingdoms: he advises France to abate of her lofty pretentions; and, in case of refusal, he exhorts the powers of Europe to unite in a *third* coalition against her. This is a subject for Kings and their ministers to review, and to them we refer it.—In his address to his countrymen on the subject of negotiation, he observes that, 'after the signal victories with which Almighty God has blessed us, he dares not propose any other basis than that of mutual retention or mutual restitution.'

Mo-y.

MISCELLANEOUS.

Art. 48. *Memorials of the Family of Tufton, Earls of Thanet;* deduced from various Sources of authentic Information. 8vo. pp. 170.

170, with Plates. 7s. Boards. Printed by the Author, R. Pocock, Gravesend; and sold in London by Robinsons. 1800.

Mr. Pocock appears to have taken considerable pains in tracing the genealogy and connections of this honorable family. We are informed that

'From Tufton, a manor in the parish of Northiam, in the county of Sussex, is deduced the name of the antient family of the Earls of Thanet. It was at an early period after the Conquest the inheritance of their ancestors; from whence they spread into Kent, and afterwards by alliances of the most honorable kind into the northern counties; and although prior to the time of Henry the Fourth, there is a want of regularity in the descents as given upon the remaining evidences, yet proceeding through the long space upwards as far as the time of King John, there are extant several notices which sufficiently evince the worth and antiquity of that family.

'Their seat in Sussex, originally written *Toketon*, then *Tocton*, and latterly *Tufton*, was, as it yet remains, always in the principal branch, and it is at this period not to be ascertained on what condition they came to the possession of this district, where they must have resided as on the principal manor, if not the only one for several centuries, and according to the prevailing custom in the early state of surnames, its owners are distinguished by that of their lands, with the usual *de* prefixed, a proof of their having been ever esteemed among the gentry of the kingdom.'

It is, however, with Simon de Tufton of Northiam, that the regular pedigree of the family begins, in the reign of Richard II. Sir Nicholas Tufton, from whom the present Earl is the ninth in descent, was the first of the family who became possessed of the Baronage; having been, by letters patent bearing date November 1, 1626, in the IId year of Charles I., advanced to the dignity of a Baron of the realm, by the title of Lord Tufton, of Tufton in Sussex; and also, on August 5, 1628, created Earl of Thanet.—Of the family seat at Hothfield in Kent, we have the following account;

'John Tufton was seated at Hothfield in Kent, so early as the time of Henry the Eighth, and as this has been since the principal residence of this eminent family, it will not be improper to enter rather at length into its history, particularly as it was held by a remarkable tenure of the arch-bishops of Canterbury, who, in the high officers engaged about them on the day they were enthroned, imitated the king upon his coronation. This place with many more had belonged to Odo, bishop of Baieux, and on the disgrace of that extraordinary man, it was bestowed upon Fulbert, who held certain manors in barony for the defence of Dover-castle; he resided at Chilham, and was bound to support a certain number of soldiers for that purpose. From him it descended to Bartholomew lord Badlesmere, being held by grand serjeantry of the Lord archbishop of Canterbury, by doing the office of chamberlain on the day of his enthronization; for which service he was entitled to the furniture of his bedchamber. Upon Walter Reynold arriving to this eminent station, which happened when the Lord Badlesmere had been in possession of Hothfield about eight years, he made his claim to the office of chamberlain in right of his

his manor, before Gilbert de Clare, earl of Gloucester, high steward to the archbishop, who held a court for hearing and determining claims on the occasion; when he was admitted by the earl, and also by the consent of the archbishop performed the service: but there seems to have been a demur concerning his fee; for by a verbal agreement between him and the archbishop, he was to return after the festival, the bed, curtains, and furniture, with the vessels of the chamber, (likely of silver,) until he had made it appear by an authentic deed, or by reason and justice, that he was entitled to these advantages in right of his possession at Hothfield, a condition he faithfully abided by; and it seems to have been an honor (such was the affection borne towards the church in those times) for one of the richest barons in Kent, to wait on the archbishop in his chamber, and to serve up the water and towel for the washing his hands.

'This manor having afterwards fallen to the crown by the attainder of Thomas lord Roos, it was granted in the eighteenth year of Edward the Fourth to Sir John Fogge, of Repton, for life; with whom it continued to the seventeenth year of Henry the Seventh; and was then in the crown till Henry the Eighth granted it to John Tufton, Esq. of Northiam, towards the end of his reign.' O. Wood.

Art. 49. *Ancient Metaphysics.* Vol. VI. 4to. pp. 360. 15s. Boards. Cadell jun. and Davies. 1799.

To readers who are conversant with the well-known writings of the very singular philosopher, (now no more!) whose last publication lies before us, it will be sufficient barely to announce this volume, as the termination of his celebrated "Ancient Metaphysics."—Like the preceding parts, it contains the fruit of much (perhaps unparalleled) thinking, extensive yet profound.

This concluding volume, as Lord Monboddo expressly terms it in the introductory part, is professedly theological, though it is strongly tinctured with metaphysics; and it will doubtless afford much of that uncommon species of literary instruction and entertainment, for which all the works of this extraordinary and learned writer have been justly celebrated.

Art. 50. *Literary Miscellanies;* including a Dissertation on Anecdotes. A new Edition, enlarged. By J. D'Israeli. 12mo. 4s. Murray and Co. 1801.

In our Review for December 1797, p. 374, we noticed, not slightly, the first edition of this work;—which, says the very *patient* author, has '*long* been out of print; but, being still enquired after,' he found himself encouraged to present it once more to the public. These literary miscellanies, therefore, now make their re-appearance in a neat pocket edition; introduced by an apposite quotation from BAYLE, in commendation of such "instructive recreations."—Whether or not the favourable passage, so happily selected, accompanied the first edition, we do not now recollect.

Art. 51. *Romances;* second Edition corrected. To which is now added, a Modern Romance. By J. D'Israeli. 12mo. 4s. sewed. Murray and Highley. 1801.

The re-publication of these ingenious pieces [for the first appearance of

of which, see M. R. vol. xxix. p. 121,] is prefaced by some well written remarks on Persian poetry; of which the author professes himself to be a great admirer. He is not blind, however, to the defects of the Oriental Bards, for he briefly acknowleges and points them out: but at the same time, he concludes his critical observations with a warm encomium on the characteristic beauties of Ferdusi, Sadi, Hafiz, and Jami.

Art. 52. *An Analytical View of a Popular Work, on a new Plan, entitled Fountains at Home, for the Poor as well as for the Rich;* with an Appendix, containing a short Address to the Colleges of Physicians and of Surgeons at Dublin. By William Patterson, M. D. &c. 8vo. pp. 54. Dublin. 1800.

This pamphlet may be considered as the prospectus of a work which the author has in contemplation. From the *Table of Contents*, with which we are here presented, it promises to embrace a great variety of objects, though the state of Ireland seems to form Dr. Patterson's principal scope. We have to acknowlege, at the same time, the favour of two printed letters, transmitted by Dr. Patterson, in which he proposes to destroy the contagion of yellow fever by means of heat.

We shall be glad to see the large work, promised by Dr. P. The present pamphlet, though rather desultory, bears evident marks of reading and reflection; and he appears to be influenced in his undertaking by motives of real patriotism and benevolence. Fer.

Art. 53. *Essays, Philosophical and Chemical.* By a Gentleman of Exeter. 8vo. 3s. sewed. Cawthorne.

These essays are here neatly re-printed from a collection published by the Society of Exeter, analysed in our xxiid vol. N. S. p. 1, &c. In course, we can only notice this as a new edition of these well-written and amusing papers; adding that the subjects of them are as follow: *Cursory Remarks on the present State of Philosophy and Science;—Reflections on the Composition and Decomposition of the Atmosphere, as influencing meteorological Phænomena;*—and *Observations on Light, particularly on its Combination and Separation as a Chemical Principle.* D.° & G.2.

CORRESPONDENCE.

A learned Correspondent, James Tate, M. A. of Richmond, Yorkshire, has sent us the following illustration of Mr. Porson's note on Euripides, Hecuba, 347. "*Quid velim, melius fortasse intelligitur, si dicam, paucissimos apud Tragicos versus ocurrere similes Ionis initio,*

Ἄτλας ὁ χαλκέοισι νώτοις οὐρανόν.

C/

'*To the* EDITORS *of the* MONTHLY REVIEW.

'GENTLEMEN,

'THE Monthly Review having been now for a long series of years the occasional depositary of criticisms the most acute and profound on the Greek language, I take the liberty of offering a few metrical observationsin reference chiefly to a remark in M. R. March, 1800, p. 336.

'In the place above cited, the M. R. says, 'Mr. Porson never intended, we may confidently assert, that his Canon (vide Hecub. v. 347.) should be considered as relating to Iambic verses in general.' And in confirmation

tion of this remark, the reader is sent to the Ion, as containing in v. 1. 22. 65. 278. 318. 362. 366. so many exceptions to Mr. Porson's Canon; and so indeed, at first sight, they seem. But let the Canon be divided into two, and worded as follows; and the exceptions will disappear in the last five instances. In the first two, a small correction will set every thing right.

'Canon I. When an Iambic verse ends in a trisyllable or quasitrisyllable, (as τῳ θεῳ γαρ ΕΝ ΦΙΛΟΝ, or σπαργανοισι θ' ΟΙΣ ΕΧΕΣ) the foot preceding the last is in the tragic writers very rarely if ever a Spondee, in the Comic it is very frequently so.

'Canon II. If a monosyllable precede the trisyllable or quasitrisyllable with which the verse ends, so that the last four syllables form as it were, when pronounced, one quadrisyllabic, or two disyllabic words, then the foot preceding the last may be indifferently a Spondee or an Iambus.

'Under this *latter* Canon, vv. 65. 278. 318. 362. and 366. evidently fall; and to the *former*, vv. 1. 22. afford only an apparent exception.

V. 1. Ατλας ὁ χαλκεοισι νωτοις ουρανον,
read Ατλας ὁ νωτοις χαλκεοισιν ουρανον.

V. 22. Φρουρω παραζευξασα φυλακας σωματος,
read Φρουρω παραζευξασα φυλακε σωματος.

So the context too demands, and so, before I had the opportunity of seeing Mr. Porson's decisive note, ad Phæn. v. 1419. I had corrected the verse in Mr. Wakefield's edition of the Ion.

'The only real exception to the 1st Canon, which I have hitherto met with, is in the Phœnissæ, v. 759. αμφοτερον απολειφθεν γαρ ουδεν θατερον, a verse certainly deficient in harmony, and which must be considered as one of those very few negligent verses *quos incuria fudit*, or perhaps as a sacrifice of sound to sense, since it seems almost impossible by any other words to convey the same ideas in the same portion of metre.

'The Canon in Anapæstic metre, which seems hitherto to have escaped remark, is the following:

'In regular systems of Anapæstic verses in the Tragic writers, *the Versus Paræmiacus is then only legitimate, when it is constructed similarly to the concluding Hepthemimes of an Heroic Verse*, and like that preferring, before the final syllable, an Anapæst to a Spondee.'

The observations on the note in the Hecuba we submit to the learned Greek Professor.—To the Canon which banishes *Dactyls* from the first place of Paræmiacs, we cannot subscribe assent, till Mr. Tate produces every Dimeter Catalectic Anapestic from every one of the Tragedies and Comedies, corrected *without violence*, and reduced to his scheme by *transposition*, or *unstrained alteration*.—Mr. T. cites instances from *Æsch.* Prom. Eumenid.—*Eurip.* Med. Alcest. Ion. Suppl.—*Soph.* Œdip. Col.—Should he continue his search, he will find (if we mistake not,) many more *unbending* verses than he seems prepared to expect.

* * * * *

Since the above was written, Mr. Tate's second letter has arrived. We still recommend to him a *thorough* perusal of the Greek Plays, Tragedies, Comedies, and Fragments; and to insert his Canon, and his instances, if he then supposes it *to hold good*, in the work which he mentions as likely to appear.

To our learned Correspondent's proposed corrections, even if the necessity of them were demonstrated, we could not wholly agree.—

Nothing must be left for future gleaners. Every individual line, of authority, must be brought forwards fairly; and then it will be wise to remember that the *Paræmiacus* is a verse of the Anapestic order, and not of the Dactylic. Dr. C. B.

We are informed by a literary friend now on the Continent, that Prof. WOLF, the learned editor of HOMER *, has lately published an edition of the four Orations attributed to Cicero, viz. I. *Post reditum in Senatu.* II. *Ad Quirites post reditum.* III. *Pro domo sua.* IV. *De Haruspicum responsis:*—in which his chief object is to examine the contending arguments of *Markland* and *Gesner*; and to subjoin an ample commentary, including a discussion of all that respects Ciceronian latinity, the oratorical art, and the truth of the several facts mentioned in the orations.

The work has not yet reached us: but, when we have obtained a copy of it, we shall probably be able to afford our readers an ample view of this interesting discussion. Mo.y.

* See App. to vol. xxi. N. S. p. 563, and to vol. xxii. p. 523.

In answer to the letter of 'an old Surgeon of London,' respecting the application of Spirit of Turpentine to Burns and Scalds, we must observe that we did not recommend Mr. Kentish's practice on the authority of his pamphlet alone, but that we have experienced the safety and efficacy of the method. If the 'Old Surgeon' will lay aside prejudice, and make *one* fair trial of this plan, we think that he will be convinced of its superiority over any application of cold. Fer.

We must request Dr. Montucci to excuse us from interfering, in any manner, in a controversy in which we have no concern; and to consider that we cannot, with any propriety, give an account of a publication which relates to a prior work, before that work itself has made its appearance in our pages.

Dr. Patterson's note is received; and he will find a brief account of the pamphlet to which it relates, in our present Number (p. 110.). We are sorry that accident has caused it to be so long overlooked.

Mr. Parkinson may be assured that the note to a Correspondent, of which he speaks, did not relate to him:—on the contrary, we profess ourselves conscious that he has some right to complain of the trial to which we have (unintentionally) subjected *his* patience.

We offer our thanks to a friend at Manchester, for his second communication on a certain point of controversy: but we cannot properly avail ourselves of unpublished evidence; and, above all, we must take care not to become parties in the dispute.

☞ Want of room obliges us to postpone the notice of other letters.

*** The APPENDIX to Vol. XXXV. N. S. of the MONTHLY REVIEW is published with this Number, as usual, and contains accounts of a variety of important FOREIGN BOOKS.

Errors, p. 33, 35, 41, 45, 59, 110.